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**THIS PAGE BLANK (USPTO)**



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 485 490 495  
 Ala Arg Asn Leu Val Glu Glu Arg Lys Met Leu Glu Glu Val Phe Ser  
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 Gly Phe Ile Tyr Asp Glu Arg Asp Gly Ala Phe Arg Val Lys Ser Glu  
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 Tyr Tyr Glu Ala Asp Leu Lys Val His Gly Leu Leu Lys Gly Val Pro  
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 Leu Ala Asp Asp Met Gly Leu Gly Lys Thr Leu Gln Ala Ile Ile Ala  
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 Val Thr Gln Ser Lys Leu Glu Lys Gly Ser Gly Cys Ser Leu Ile Val  
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 Lys Glu Asp Val Leu Lys Asp Leu Pro Pro Val Ser Glu Ile Leu Tyr  
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 Ile Cys Cys His Pro Ala Ile Phe Ala Lys Asp Ala Pro Glu Pro Gly  
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 <212>PRT  
 <213>Chlamydia pneumoniae  
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 20 25 30  
 Ser Gly Asn Val Gly Ile Asp Leu Gly Thr Ala Asn Thr Leu Val Tyr  
 35 40 45  
 Val Arg Gly Arg Gly Ile Val Leu Ser Glu Pro Ser Val Val Ala Val  
 50 55 60  
 Asp Ala Gln Thr His Ala Val Leu Ala Val Gly His Lys Ala Lys Ala  
 65 70 75 80  
 Met Leu Gly Lys Thr Pro Arg Lys Ile Met Ala Val Arg Pro Met Lys  
 85 90 95  
 Asp Gly Val Ile Ala Asp Phe Glu Ile Ala Glu Gly Met Leu Lys Ala  
 100 105 110  
 Leu Ile Lys Arg Val Thr Pro Ser Arg Ser Val Phe Arg Pro Arg Ile  
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 Leu Ile Ala Val Pro Ser Gly Ile Thr Gly Val Glu Lys Arg Ala Val  
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 Glu Asp Ser Ala Leu His Ala Gly Ala Gln Glu Val Ile Leu Ile Glu  
 145 150 155 160  
 Glu Pro Met Ala Ala Ala Ile Gly Val Asp Leu Pro Val His Glu Pro  
 165 170 175  
 Ala Ala Ser Met Ile Ile Asp Ile Gly Gly Thr Thr Glu Ile Ala  
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 Ile Ile Ser Leu Gly Gly Ile Val Glu Ser Arg Ser Leu Arg Ile Ala  
 195 200 205  
 Gly Asp Glu Phe Asp Glu Cys Ile Ile Asn Tyr Met Arg Arg Thr Tyr  
 210 215 220  
 Asn Leu Met Ile Gly Pro Arg Thr Ala Glu Glu Ile Lys Ile Thr Ile  
 225 230 235 240  
 Gly Ser Ala Tyr Pro Leu Gly Asp Gln Glu Leu Glu Met Glu Val Arg  
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 260 265 270  
 Val Glu Ile Arg Glu Cys Leu Ala Glu Pro Ile Gln Gln Ile Ile Glu  
 275 280 285  
 Cys Val Arg Leu Thr Leu Glu Lys Cys Pro Pro Glu Leu Ser Ala Asp  
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&lt;210&gt;918

&lt;211&gt;579

&lt;212&gt;FRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;918

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 Tyr Asp Glu Leu Cys Thr Leu Met Glu Ser Thr Gly Thr Met Ile Arg  
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 Leu Asn Pro Glu Phe His Pro Asn Cys Phe Leu Val Arg Ser Ser Ala  
 35 40 45  
 Asp Asp Val Ala Arg Val Glu Gln Phe Thr Phe Ile Cys Thr Ser Thr  
 50 55 60  
 Glu Ala Glu Ala Gly Pro Thr Asn Asn Trp Arg Asp Pro Gln Glu Met  
 65 70 75 80  
 Arg Arg Glu Leu His Gln Leu Phe Arg Gly Cys Met Gln Gly Arg Thr  
 85 90 95  
 Leu Tyr Ile Val Pro Phe Cys Met Gly Pro Leu Asp Ser Pro Phe Ser  
 100 105 110

Ile Val Gly Val Glu Leu Thr Asp Ser Pro Tyr Val Val Cys Ser Met  
 115 120 125  
 Lys Ile Met Thr Arg Met Gly Asp Asp Val Leu Arg Ser Leu Gly Thr  
 130 135 140  
 Ser Gly Lys Phe Leu Lys Cys Leu His Ser Val Gly Lys Pro Leu Ser  
 145 150 155 160  
 Pro Gly Glu Ala Asp Val Ser Trp Pro Cys Asn Pro Lys Ser Met Arg  
 165 170 175  
 Ile Val His Phe Gln Asp Asp Ser Ser Val Met Ser Phe Gly Ser Gly  
 180 185 190  
 Tyr Gly Gly Asn Ala Leu Leu Gly Lys Lys Cys Val Ala Leu Arg Leu  
 195 200 205  
 Ala Ser Tyr Met Ala Lys Ser Gln Gly Trp Leu Ala Glu His Met Leu  
 210 215 220  
 Ile Ile Gly Ile Thr Asn Pro Glu Gly Lys Lys Lys Tyr Phe Ser Ala  
 225 230 235 240  
 Ser Phe Pro Ser Ala Cys Gly Lys Thr Asn Leu Ala Met Leu Met Pro  
 245 250 255  
 Lys Leu Pro Gly Trp Lys Ile Glu Cys Ile Gly Asp Asp Ile Ala Trp  
 260 265 270  
 Ile Arg Pro Gly Arg Asp Gly Arg Leu Tyr Ala Val Asn Pro Glu Tyr  
 275 280 285  
 Gly Phe Phe Gly Val Ala Pro Gly Thr Ser Glu Arg Thr Asn Pro Asn  
 290 295 300  
 Ala Leu Ala Thr Cys Arg Ser Asn Ser Ile Phe Thr Asn Val Ala Leu  
 305 310 315 320  
 Thr Ala Asp Gly Asp Val Trp Trp Glu Gly Leu Thr Glu Gln Pro Pro  
 325 330 335  
 Glu Pro Leu Thr Asp Trp Leu Gly Lys Pro Trp Lys Pro Gly Gly Ser  
 340 345 350  
 Pro Ala Ala His Pro Asn Ser Arg Phe Thr Ala Pro Leu Arg Gln Cys  
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 Pro Ser Leu Asp Pro Glu Trp Asn Ser Pro Gln Gly Val Pro Leu Asp  
 370 375 380  
 Ala Ile Ile Phe Gly Gly Arg Arg Ser Glu Thr Ile Pro Leu Val Tyr  
 385 390 395 400  
 Glu Ala Leu Ser Trp Glu His Gly Val Thr Ile Gly Ala Gly Met Ser  
 405 410 415  
 Ser Thr Thr Thr Ala Ala Ile Val Gly Gln Leu Gly Lys Leu Arg His  
 420 425 430  
 Asp Pro Phe Ala Met Leu Pro Phe Cys Gly Tyr Asn Met Ala Tyr Tyr  
 435 440 445  
 Phe Gln His Trp Leu Ser Phe Ala Glu Asn Arg Ser Leu Lys Leu Pro  
 450 455 460  
 Lys Ile Phe Gly Val Asn Trp Phe Arg Lys Asn Asn Gln Gly Glu Phe  
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 Leu Trp Pro Gly Phe Ser Glu Asn Leu Arg Val Leu Glu Trp Ile Phe  
 485 490 495  
 Gln Arg Thr Asp Gly Leu Glu Asp Ile Ala Glu Arg Thr Pro Ile Gly  
 500 505 510  
 Tyr Leu Pro Asn Ile Gln Lys Phe Asn Leu Asn Gly Leu Asn Leu Asp  
 515 520 525  
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 530 535 540  
 Ala Glu Val Glu Asn Ile Gly Glu Tyr Leu Lys Ile Phe Gly Ser Asp  
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 Cys Pro Gln Gln Ile Thr Asp Glu Leu Leu Arg Ile Lys Ser Glu Leu  
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 Lys Glu Lys

&lt;210&gt;919

&lt;211&gt;150

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;919

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 Cys Ser Val Asn Pro Ser His Gln Thr Ser Pro Ser Ala Val Lys Ala  
 35 40 45  
 Thr Phe Val Lys Ile Glu Phe Asp Leu Gln Val Ala Lys Ala Leu Gly  
 50 55 60  
 Phe Val Arg Ser Glu Val Pro Gly Ala Thr Pro Lys Asn Pro Tyr Ser  
 65 70 75 80  
 Gly Phe Thr Ala Tyr Asn Leu Pro Ser Arg Pro Gly Arg Ile Gln Ala  
 85 90 95  
 Ile Ser Ser Pro Ile His Ser Ile Phe Gln Pro Gly Ser Leu Gly Ile  
 100 105 110  
 Asn Ile Ala Lys Phe Val Leu Pro Gln Ala Leu Gly Asn Glu Ala Glu  
 115 120 125  
 Lys Tyr Phe Phe Phe Pro Ser Gly Leu Val Ile Pro Ile Ile Asn Met  
 130 135 140  
 Cys Ser Ala Ser Gln Pro  
 145 150

&lt;210&gt;920

&lt;211&gt;780

&lt;212&gt;PST

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;920

Ile Lys Leu Arg Ile Ile Asp Tyr Tyr Tyr Leu Ile Asn Thr Val Thr  
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 Ser Gly Gly Lys Ile Asp Thr Ser Ala Ile Glu Leu Ser Cys Ser Ala  
 35 40 45  
 Leu Phe Phe Gln Glu Leu Gln Asp Lys Ala Gln Gly Leu Lys His Ala  
 50 55 60  
 Leu Gly Leu Val Gln Glu Leu Ser Ala Glu Ala Leu Arg Pro Ala Gln  
 65 70 75 80  
 Val Gln Thr Ser Ile Ser Tyr Leu Pro Thr Glu Glu Ser Ser Arg Pro  
 85 90 95  
 Gly Ile Ser Ala Gly Ile Ile Asp Arg Thr Met Pro Thr Phe Thr Asp  
 100 105 110  
 Asp Glu Val Lys Ala Ile Leu Gln Asn Pro Asn Phe Glu Thr Ser Lys  
 115 120 125  
 Ile Phe Val Glu Gly Leu Asp Lys Val Phe Lys Ser Tyr Leu Asp Ser  
 130 135 140  
 Val Thr Pro Pro Glu Gly Ile Asp Pro Ser Asn Pro Glu Ser Ala Ile  
 145 150 155 160  
 Ile Leu Asn Tyr Ile Thr Leu Leu Asn Asn Leu Lys Pro Lys Phe Ala  
 165 170 175  
 Ala Gly Ser Thr Pro Thr Asp Ala Asp Tyr Asn Ala Leu Tyr Ala Leu  
 180 185 190  
 Pro Gly Asp Phe Val Lys Glu Ile Glu Ala Leu Lys Ala Ala Asp Ala  
 195 200 205  
 Pro Pro Lys Ser Lys Val His Ala Phe Trp Gln Glu Ile Met Thr Ile  
 210 215 220  
 Tyr Asn Asn Met Gln Val Leu Ser Tyr Pro Val Thr Asp Tyr Leu Asn  
 225 230 235 240  
 Val Gln Ile Ala Asp Leu Ser Leu Asn Ile Thr Ala Ala Gln Glu Val  
 245 250 255  
 Gln Gln Tyr Leu Lys Asn Phe Tyr Ser Ile Leu Lys Asp Ile Leu Asn  
 260 265 270  
 Pro Gly Trp Thr Asp Pro Gln Ala Thr His Tyr Pro Ala Asp Ala Glu  
 275 280 285  
 Tyr Asn Ala Arg Asp Ala Gly Val Ile Gln Ser Leu Leu Asn Leu Ser  
 290 295 300

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asn | Tyr | Arg | Gln | Leu | Thr | Glu | Asn | Met | Leu | Pro | Asn | Thr | Asp | Thr |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Ser | Leu | Pro | Gln | Glu | Ile | Ile | Ala | Gln | Ile | Arg | Ser | Phe | Gln | Asn | Gly |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Val | Asn | Gly | Thr | Ile | Ile | Ala | Ser | Asn | Thr | Leu | Leu | Pro | Thr | Thr | Met |
|     |     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |
| Arg | Leu | Asp | Thr | Leu | Leu | Gly | Val | Ile | Tyr | Thr | Tyr | Gln | Cys | Cys | Ala |
|     |     | 355 |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |
| Thr | Ile | Phe | Gly | Met | Ser | Tyr | Gly | Thr | Ser | Thr | Pro | Ala | Lys | Gln | Asn |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Tyr | Ile | Asp | Ala | Ile | Asn | Gln | Glu | Lys | Ser | Tyr | Trp | Gln | Ala | Arg | Ala |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asn | Gly | Phe | Asp | Val | Thr | Ser | Asp | Gln | Val | Phe | Asp | Gln | Phe | Ala | Thr |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Asn | Ile | Gln | Ser | Gly | Thr | Ser | Tyr | Arg | Gly | Ile | Asp | Leu | Phe | Lys | Asn |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Asn | Lys | Val | Asn | Glu | Ile | Asn | Pro | Ile | Phe | Leu | Ser | Gln | Ala | Ala | Ser |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Phe | Leu | Arg | Tyr | Pro | Tyr | Asn | Leu | Met | Ser | Arg | Ser | Met | Tyr | Gln | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Ile | Glu | Asp | Ala | Ala | Asn | Arg | Ser | Ile | Thr | Ala | Leu | Asp | Gly | Leu | Ile |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Ser | Gly | Trp | Ser | Thr | Gln | Ile | Ala | Thr | Phe | Gln | Thr | Gln | Lys | Asn | Ser |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Leu | Asp | Pro | Ser | Leu | Leu | Lys | Tyr | Phe | Asp | Thr | Met | Lys | Ala | Asn | Lys |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Glu | Ser | Phe | Val | Thr | Thr | Ala | Pro | Leu | Gln | Met | Val | Tyr | Ser | Ser | Leu |
|     | 515 |     |     |     |     | 520 |     |     |     |     |     | 525 |     |     |     |
| Met | Leu | Asp | Lys | Tyr | Leu | Pro | Thr | Gln | Gln | Asn | Val | Ile | Ala | Ser | Leu |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Gly | Ile | Gln | Met | Thr | Tyr | Ser | Asn | Lys | Ala | Ala | Lys | Tyr | Leu | Asn | Glu |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Leu | Ile | Lys | Glu | Ile | Thr | Thr | Phe | Gln | Ser | Ala | Asp | Ile | Tyr | Tyr | Ser |
|     |     |     | 565 |     |     |     |     | 570 |     |     |     |     |     | 575 |     |
| Leu | Ser | Ile | Tyr | Leu | Lys | Gln | Met | Asn | Leu | Gln | Ala | Val | Ala | Asp | Pro |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Ile | Gly | Lys | Ala | Val | Gly | Val | Leu | Asn | Asp | Glu | Lys | Thr | Arg | Ala | Met |
|     | 595 |     |     |     |     | 600 |     |     |     |     |     | 605 |     |     |     |
| Ala | Asp | Ile | Thr | Arg | Cys | Asn | Lys | Ile | Lys | Ala | Ala | Ile | Asp | Lys | Met |
|     | 610 |     |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |
| Leu | Val | Glu | Ile | Lys | Ala | Asp | Ala | Glu | Leu | Ser | Lys | Ser | Gln | Ile | Arg |
| 625 |     |     |     |     | 630 |     |     |     |     |     | 635 |     |     |     | 640 |
| Glu | Leu | Val | Asp | Thr | Leu | Thr | Asn | Phe | Lys | Ser | Gln | Ser | Asp | Asp | Leu |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Ile | Arg | Asn | Leu | Ser | Cys | Leu | Leu | Gly | Phe | Leu | Ser | Gly | Leu | Thr | Leu |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     |     | 670 |     |
| Lys | Ala | Val | Asn | Asp | Pro | Asn | Ala | Thr | Tyr | Glu | Ala | Phe | Thr | Ala | Glu |
|     | 675 |     |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Ile | Phe | Thr | Glu | Pro | Phe | Asn | Asn | Trp | Lys | Arg | Gln | Leu | Ala | Thr | Phe |
|     | 690 |     |     |     |     | 695 |     |     |     |     |     | 700 |     |     |     |
| Glu | Ser | Phe | Val | Ile | Gln | Gly | Gly | Gln | Asn | Gly | Ile | Thr | Pro | Gly | Gly |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Gln | Gln | Gln | Leu | Leu | Gln | Ala | Met | Glu | Ser | Ser | Gln | Gln | Asp | Phe | Ser |
|     |     |     | 725 |     |     |     |     |     |     | 730 |     |     |     | 735 |     |
| Thr | Phe | Asn | Gln | Asn | Gln | Gln | Leu | Ala | Leu | Gln | Leu | Glu | Ser | Ser | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Met | Gln | Gln | Glu | Trp | Thr | Leu | Val | Ser | Ala | Ala | Leu | Ala | Leu | Leu | Asn |
|     |     |     | 755 |     |     |     | 760 |     |     |     |     |     | 765 |     |     |
| Gln | Met | Val | Ser | Lys | Ile | Ala | Arg | Arg | Ile | Lys | Ser |     |     |     |     |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |

&lt;210&gt;921

&lt;211&gt;391

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;921

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Asn Ile Met His Pro Lys Ile Glu Lys Arg Asn Ser Leu Pro Leu Thr
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Thr Val Asp Tyr Val Asp Ala Thr Thr Leu Ser Arg His Leu Thr Val
35     40     45
Leu Lys Asp Val Ile Lys Glu Ala Arg Asn Leu Asp Leu Gly Lys Ala
50     55     60
Phe Leu Thr Ser Met Lys Gln Gly Phe Ile Asn Thr Gly Thr Glu Leu
65     70     75     80
Ala Ile Ile Gln Ala Ser Leu Ala Asp Gln Ser Ser Arg Glu Ser Arg
85     90     95
Lys Lys Glu Glu Lys Ile Phe His Gln His Leu Gly Lys Ala Ala Pro
100    105    110
Gln Ala Ala Thr Ala Thr Ser Gly Val Gln Pro Thr Ala Asp Pro Val
115    120    125
Ala Asp Lys Met Pro Leu Gln Ser Ala Phe Ala Tyr Val Leu Leu Asp
130    135    140
Lys Tyr Ile Pro Ala Gln Glu Glu Ala Leu Tyr Ala Leu Gly Arg Glu
145    150    155    160
Leu Asn Leu Ser Gly Tyr Ala Gln Asn Leu Phe Ser Pro Leu Leu Asp
165    170    175
Met Ile Lys Ser Phe Asn Ser Ala Pro Ile Asn Tyr Asn Leu Gly Ser
180    185    190
Tyr Ile Ser Gln Thr Ser Gly Thr Ala Asn Phe Ala Tyr Gly Tyr Glu
195    200    205
Met Ile Leu Ser Arg Tyr Asn Asn Glu Val Ser Gln Cys Arg Leu Asp
210    215    220
Ile Ala Ser Thr Val Lys Ala Lys Ala Ala Leu Ala Asn Met Ser Ala
225    230    235    240
Ser Val Lys Ala Asn Val Ser Leu Thr Asp Ala Gln Lys Lys Gln Ile
245    250    255
Glu Asp Ile Ile Ala Ser Tyr Thr Lys Ser Leu Asp Val Ile His Thr
260    265    270
Gln Leu Thr Asp Val Met Thr Asn Leu Ala Ser Ile Thr Phe Val Pro
275    280    285
Gly Leu Asn Lys Tyr Asp Pro Ser Tyr Arg Ile Val Gly Gly Asp Leu
290    295    300
Ser Ile Ile Ala Leu Gln Asn Asp Glu Lys Val Leu Val Asp Gly Lys
305    310    315    320
Val Asp Ile Thr Thr Ala Val Asn Glu Gly Gly Leu Leu Asn Phe Phe
325    330    335
Thr Thr Val Leu Thr Asp Val Gln Asn Tyr Gly Asp Leu Ala Gln Thr
340    345    350
Gln Gln Leu Met Leu Asp Leu Glu Leu Lys Ala Met Gln Gln Gln Trp
355    360    365
Ser Leu Val Ser Ala Ser Leu Lys Leu Leu Asn Gly Met Tyr Thr Thr
370    375    380
Val Ile Ser Gly Phe Lys Asn
385    390

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&lt;210&gt;922

&lt;211&gt;348

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;922

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Gly Pro Phe Asp Met Asn Ser Lys Met Leu Lys His Leu Arg Leu Ala
1      5      10      15
Thr Leu Ser Phe Ser Met Phe Phe Gly Ile Val Ser Ser Pro Ala Val
20     25     30
Tyr Ala Leu Gly Ala Gly Asn Pro Ala Ala Pro Val Leu Pro Gly Val
35     40     45
Asn Pro Glu Gln Thr Gly Trp Cys Ala Phe Gln Leu Cys Asn Ser Tyr
50     55     60

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Asp Leu Phe Ala Ala Leu Ala Gly Ser Leu Lys Phe Gly Phe Tyr Gly  
 65 70 75 80  
 Asp Tyr Val Phe Ser Glu Ser Ala His Ile Thr Asn Val Pro Val Ile  
 85 90 95  
 Thr Ser Val Thr Thr Ser Gly Thr Gly Thr Thr Pro Thr Ile Thr Ser  
 100 105 110  
 Thr Thr Lys Asn Val Asp Phe Asp Leu Asn Asn Ser Ser Ile Ser Ser  
 115 120 125  
 Ser Cys Val Phe Ala Thr Ile Ala Leu Gln Glu Thr Ser Pro Ala Ala  
 130 135 140  
 Ile Pro Leu Leu Asp Ile Ala Phe Thr Ala Arg Val Gly Gly Leu Lys  
 145 150 155 160  
 Gln Tyr Tyr Arg Leu Pro Leu Asn Ala Tyr Arg Asp Phe Thr Ser Asn  
 165 170 175  
 Pro Leu Asn Ala Glu Ser Glu Val Thr Asp Gly Leu Ile Glu Val Gln  
 180 185 190  
 Ser Asp Tyr Gly Ile Val Trp Gly Leu Ser Leu Glu Lys Val Leu Trp  
 195 200 205  
 Lys Asp Gly Val Ser Phe Val Gly Val Ser Ala Asp Tyr Arg His Gly  
 210 215 220  
 Ser Ser Pro Ile Asn Tyr Ile Ile Val Tyr Asn Lys Ala Asn Pro Glu  
 225 230 235 240  
 Ile Tyr Phe Asp Ala Thr Asp Gly Asn Leu Ser Tyr Lys Glu Trp Ser  
 245 250 255  
 Ala Ser Ile Gly Ile Ser Thr Tyr Leu Asn Asp Tyr Val Leu Pro Tyr  
 260 265 270  
 Ala Ser Val Ser Ile Gly Asn Thr Ser Arg Lys Ala Pro Ser Asp Ser  
 275 280 285  
 Phe Thr Glu Leu Glu Lys Gln Phe Thr Asn Phe Lys Phe Lys Ile Arg  
 290 295 300  
 Lys Ile Thr Asn Phe Asp Arg Val Asn Phe Cys Phe Gly Thr Thr Cys  
 305 310 315 320  
 Cys Ile Ser Asn Asn Phe Tyr Tyr Ser Val Glu Gly Arg Trp Gly Tyr  
 325 330 335  
 Gln Arg Ala Ile Asn Ile Thr Ser Gly Leu Gln Phe  
 340 345

&lt;210&gt;923

&lt;211&gt;334

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;923

Met Lys Gln His Ile Gly Tyr Leu Gly Met Gly Ile Trp Gly Phe Cys  
 1 5 10 15  
 Leu Ala Ser Leu Leu Ala Asn Lys Gly Tyr Pro Val Val Ala Trp Ser  
 20 25 30  
 Arg Asn Pro Asp Leu Ile Lys Gln Leu Gln Glu Glu Arg Arg His Pro  
 35 40 45  
 Leu Ala Pro Asn Val Val Ile Ser Pro Asn Leu Ser Phe Thr Thr Asp  
 50 55 60  
 Met Lys Glu Ala Ile His Asn Ala Phe Met Ile Val Glu Gly Val Thr  
 65 70 75 80  
 Ser Ala Gly Ile Arg Pro Val Ala Glu Gln Leu Lys Gln Ile Thr Asp  
 85 90 95  
 Leu Ser Val Pro Phe Val Ile Thr Ser Lys Gly Ile Glu Gln Asn Thr  
 100 105 110  
 Gly Leu Leu Leu Ser Glu Ile Met Leu Glu Val Leu Gly Asp Ser Val  
 115 120 125  
 Thr Pro Tyr Leu Gly Tyr Leu Ser Gly Pro Ser Ile Ala Lys Glu Val  
 130 135 140  
 Leu Asn Gly Ser Pro Cys Ser Val Val Val Ser Ala Tyr Asp Ser Gln  
 145 150 155 160  
 Thr Leu Lys Gln Ile His Glu Ala Phe Ser Leu Pro Thr Phe Arg Val  
 165 170 175  
 Tyr Pro Asn Thr Asp Ile Lys Gly Ala Ala Leu Gly Gly Ala Leu Lys



180 185 190  
 Asn Val Ile Ala Ile Ala Cys Gly Ile Ala Glu Gly Leu Ser Phe Gly  
 195 200 205  
 Asn Asn Ala Lys Ala Gly Leu Val Thr Arg Gly Leu His Glu Met Arg  
 210 215 220  
 Lys Leu Ala Ala Ile Met Asp Cys Lys Pro Glu Thr Leu Asn Gly Leu  
 225 230 235 240  
 Ala Gly Leu Gly Asp Leu Cys Val Thr Cys Phe Ser Glu Ser Ser Arg  
 245 250 255  
 Asn Leu Arg Phe Gly His Leu Leu Ala Gln Gly Leu Thr Phe Glu Gln  
 260 265 270  
 Ala Lys Ala Lys Ile Gly Met Val Val Glu Gly Ala Tyr Thr Ala Leu  
 275 280 285  
 Ser Ala Tyr Gln Val Ala Lys His His Lys Ile Asp Met Pro Ile Thr  
 290 295 300  
 Thr Gly Ile Tyr Arg Val Leu Tyr Glu Asn Leu Asp Leu Lys Glu Gly  
 305 310 315 320  
 Ile Ala Leu Leu Leu Gln Arg Asn Thr Lys Glu Glu Phe Leu  
 325 330  
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 <211>461  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>924  
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 Pro Ser Leu Ser Pro Lys Gln Gln Gln Arg Leu Phe Gln Gln Leu Thr  
 35 40 45  
 Ser Val Asp Ile Asp Phe Phe Arg Lys Gln Gln Gln Leu Leu Ser Ser  
 50 55 60  
 Pro Thr Ala Ile Leu Lys Asp Phe His Pro Ile Thr Ser Phe Ala Ser  
 65 70 75 80  
 Ser Gly Glu Asp Pro Glu Arg Ala His Ala Gly Thr Thr Leu Leu Lys  
 85 90 95  
 Glu Lys Lys Val Ala Cys Val Val Leu Ala Gly Gly Gln Gly Ser Arg  
 100 105 110  
 Leu Lys Cys Asp Gly Pro Lys Gly Leu Phe Pro Val Ser Pro Ile Lys  
 115 120 125  
 Lys Lys Pro Leu Phe Gln Leu Val Ala Glu Lys Val Arg Ala Ala Ser  
 130 135 140  
 Lys Leu Ala Gly Gln Pro Leu Pro Leu Ala Phe Met Thr Ser Pro Leu  
 145 150 155 160  
 Asn Thr Arg Gln Thr Arg Ser Phe Phe Glu Ser Asn Asp Tyr Phe His  
 165 170 175  
 Leu Asp Pro Asn Gln Val Asp Phe Phe Cys Gln Pro Leu Trp Pro Leu  
 180 185 190  
 Leu Thr Leu Ser Gly Asp Leu Phe Leu Glu Asp Met Asp Thr Leu Ala  
 195 200 205  
 Leu Gly Pro Asn Gly Asn Gly Cys Ile Ala Thr Leu Leu Tyr Thr Ser  
 210 215 220  
 Gly Val Trp Glu Lys Trp Lys Asn Ala Gly Ile Glu Met Val Ser Val  
 225 230 235 240  
 Ile Pro Ile Asp Asn Pro Leu Ala Leu Pro Phe Asp Val Glu Leu Cys  
 245 250 255  
 Gly Phe His Ala Met Ser Asn Asn Glu Val Thr Ile Lys Ala Ala Leu  
 260 265 270  
 Arg Gln Thr Ala Ile Glu Asp Val Gly Ile Leu Val Lys Ser His Asp  
 275 280 285  
 Ser Gly Lys Thr Ser Val Ile Glu Tyr Ser Glu Ile Pro Gln Asn Glu  
 290 295 300  
 Arg Phe Ala Leu Asn Glu Asp Gly Lys Leu Lys Tyr Cys Leu Ala Asn  
 305 310 315 320

Ile Gly Leu Tyr Cys Leu Ser Met Asp Phe Ile Arg His Ala Ala Tyr  
 325 330 335  
 Gln Gln Leu Pro Leu Tyr Lys Val His Lys His Ala Lys Gln Leu Gly  
 340 345 350  
 His Thr Ser Leu Asn Glu Lys Asn Ala Trp Lys Phe Glu Glu Phe Ile  
 355 360 365  
 Phe Asp Leu Phe Cys Tyr Ser Asp His Cys Gln Thr Leu Val Tyr Pro  
 370 375 380  
 Arg Gln Glu Cys Phe Ala Pro Leu Lys Asn Leu Glu Gly Asn His Ser  
 385 390 395 400  
 Pro Asp Thr Val Arg Gln Ala Leu Ser Asp Arg Glu Arg Gln Leu Phe  
 405 410 415  
 His Lys Val Thr Gly Lys Lys Leu Ser Pro Asn Thr Thr Phe Glu Leu  
 420 425 430  
 Glu Ala Asp Phe Tyr Tyr Pro Ser Thr Ser Thr Ser Leu His Trp Glu  
 435 440 445  
 Asn Lys Ala Phe Phe Glu Glu Pro Phe Phe Glu Ala Ser  
 450 455 460  
 <210>925  
 <211>433  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>925  
 Met Asn His Leu Asn Lys Glu Lys Leu His Ile His Asn Trp Gln Pro  
 1 5 10 15  
 Tyr Arg Ala Cys Gly Leu Leu Ser Lys Val Ser Gly Asn Leu Ile Glu  
 20 25 30  
 Val Asp Gly Leu Ser Ala Cys Leu Gly Glu Leu Cys Lys Ile Ser Ser  
 35 40 45  
 Thr Lys Asp Pro Asn Leu Leu Ala Glu Val Ile Gly Phe His Asn His  
 50 55 60  
 Thr Thr Leu Leu Met Ser Leu Ser Pro Leu His Ser Val Ala Leu Gly  
 65 70 75 80  
 Thr Glu Val Leu Pro Leu Arg Arg Pro Pro Ser Leu His Leu Ser Asp  
 85 90 95  
 His Leu Leu Gly Arg Val Leu Asp Ala Phe Gly Asn Pro Ile Asp Lys  
 100 105 110  
 Lys Glu Asp Leu Pro Lys Thr His Arg Lys Pro Leu Leu Ser Leu Pro  
 115 120 125  
 Pro Ser Pro Met Met Arg Gln Pro Ile Asp Gln Ile Phe Pro Thr Gly  
 130 135 140  
 Ile Lys Ala Ile Asp Ala Phe Leu Thr Leu Gly Lys Gly Gln Arg Ile  
 145 150 155 160  
 Gly Val Phe Ser Glu Pro Gly Ser Gly Lys Ser Ser Leu Leu Ser Ala  
 165 170 175  
 Ile Ala Leu Gly Ser Lys Ser Thr Ile Asn Val Ile Ala Leu Ile Gly  
 180 185 190  
 Glu Arg Gly Arg Glu Val Arg Glu His Ile Glu Lys His Ser Asn Ala  
 195 200 205  
 Leu Lys Gln Gln Arg Thr Ile Ile Ile Ala Ala Pro Ala His Glu Thr  
 210 215 220  
 Ala Pro Thr Lys Val Ile Ala Gly Arg Ala Ala Met Thr Ile Ala Glu  
 225 230 235 240  
 Tyr Phe Arg Glu Gln Gly His Glu Val Leu Phe Ile Met Asp Ser Leu  
 245 250 255  
 Ser Arg Trp Ile Ala Ala Leu Gln Glu Val Ala Leu Ala Arg Gly Glu  
 260 265 270  
 Thr Leu Ser Ala His Gln Tyr Ala Ala Ser Val Phe His His Val Ser  
 275 280 285  
 Glu Phe Thr Glu Arg Ala Gly Asn Asn Asp Lys Gly Ser Ile Thr Ala  
 290 295 300  
 Leu Tyr Ala Ile Leu Tyr Tyr Pro Lys His Pro Asp Ile Phe Thr Asp  
 305 310 315 320  
 Tyr Leu Lys Ser Leu Leu Asp Gly His Phe Phe Leu Thr Ser Gln Gly

325 330 335  
 Lys Ala Leu Ala Ser Pro Pro Ile Asp Ile Leu Ser Ser Leu Ser Arg  
 340 345 350  
 Ser Ala Gln Ala Leu Ala Leu Pro His His Tyr Ala Ala Ala Glu Arg  
 355 360 365  
 Leu Arg Ser Leu Leu Lys Val Tyr Asn Glu Ala Leu Asp Ile Ile His  
 370 375 380  
 Leu Gly Ala Tyr Thr Pro Gly Gln Asp Glu Glu Leu Asp Lys Ala Val  
 385 390 395 400  
 Lys Leu Leu Pro Ser Ile Lys Ala Phe Leu Ala Gln Pro Leu Ser Ser  
 405 410 415  
 Tyr Cys Tyr Leu Asp Asn Thr Leu Lys Gln Leu Glu Ala Leu Ala Asp  
 420 425 430  
 Ser

&lt;210&gt;926

&lt;211&gt;91

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;926

Met Ile His Ala Val Lys Thr Glu Ser Arg Trp Ser Ser Ser Ser Leu  
 1 5 10 15  
 Ile Ser Cys Leu Arg Ile Pro Leu Gly Val Ser Ile Leu Asn Pro Asp  
 20 25 30  
 Arg Leu Gln Glu Val Ser Gly Lys Asn Ser Ala Cys Leu Ile Met Gly  
 35 40 45  
 Ser Ser Trp Val Glu Ile Gln Ser Val Ser Val Leu Arg Ser Ser Gly  
 50 55 60  
 Trp Arg Asn Thr Leu Met Gly Val Arg Asp Leu Asn Val Val Cys Leu  
 65 70 75 80  
 Trp Ser Ala Val Glu Arg Ser Arg Ala Ser Ser  
 85 90

&lt;210&gt;927

&lt;211&gt;266

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;927

Met Thr Leu Pro Leu Glu Pro Met Ile Phe Trp Ser Ser Leu Ser Ala  
 1 5 10 15  
 Lys Val Met Lys Lys Phe Leu Thr Pro His Cys Ala Gly Thr Phe Ser  
 20 25 30  
 Glu Glu Asp Ala Glu Ala Lys Glu Ala His Leu Val Thr Gly Lys Gln  
 35 40 45  
 Gly His Arg Leu Met Gly Asn Cys Val Thr Phe Tyr Trp Leu Val Asp  
 50 55 60  
 Lys Lys Asn Gly Val Ile Leu Asp Ala Lys Phe Gln Tyr Phe Gly His  
 65 70 75 80  
 Pro Tyr Leu Ile Pro Leu Ala Glu Ala Val Cys Asn Leu Val Cys Gly  
 85 90 95  
 Lys Ser Tyr Ser Glu Ala Tyr Lys Met Thr Leu Asp Asp Ile Asp Lys  
 100 105 110  
 Ser Leu Arg Val His Ala His Gln Pro Ala Leu Pro Glu Asp Ser Ile  
 115 120 125  
 Ser Leu Tyr His Phe Val Ile Asp Ala Leu Asp Thr Ala Val Glu Gln  
 130 135 140  
 Cys Leu Glu Ile Pro Leu Glu Asp Gly Ser Leu Pro Leu Gln Asn Ser  
 145 150 155 160  
 Pro Met Asn Leu Asp Phe Glu Asp Ala Asn Pro Tyr Ser Gln Ser Asp  
 165 170 175  
 Trp Glu Ala Leu Thr His Glu Gln Lys Leu Tyr Ala Leu Arg Ala Thr  
 180 185 190  
 Ile Ala Glu Lys Ile Gly Pro Tyr Ile Ala Met Asp Gly Glu Val  
 195 200 205  
 Thr Val Glu Ser Leu Glu Asn Phe Ile Val Thr Ile Ala Tyr Ser Gly

210 215 220  
 Asn Cys Ser Gly Cys Pro Ser Ser Leu Gly Ser Thr Leu Asn Ser Ile  
 225 230 235 240  
 Gly Gln Leu Leu Arg Ala Tyr Ile Tyr Pro Gln Leu Gln Val Lys Val  
 245 250 255  
 Asp Gln Ser Ser Leu Asn Leu Ser His Pro  
 260 265  
 <210>928  
 <211>401  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>928  
 Gly Arg Gly Thr Ile Phe Arg Ile Thr Asp Gly Lys Thr Ser Cys Ile  
 1 5 10 15  
 Ser Met Glu Lys Pro Gln Asn Arg Lys Ala Pro Arg Ile Phe Trp Leu  
 20 25 30  
 Asn Asn Gln Val Ala Ile Pro Pro Ser Glu Arg Val Lys Glu Ser Tyr  
 35 40 45  
 Ala Leu His Ser Asp Ile Phe Ser Leu Pro Pro Gly Ser Ala Leu Lys  
 50 55 60  
 Leu Ala Glu Lys Thr Glu Glu Ser Ile Arg Gln Leu Val Gly Leu Lys  
 65 70 75 80  
 Asp Ser His Ile Phe Arg Phe Val Pro His Phe Pro His Val Val His  
 85 90 95  
 Ile Val Leu Ala Ala Leu Val Glu Asn Leu Ser Met Phe Gln Gly Arg  
 100 105 110  
 Asn His Ile Ile Leu Pro Ala His Asp Gln Gln Leu Leu Ile Asn Ser  
 115 120 125  
 Leu Cys Arg His Gln Gly Leu Gly Thr Thr Tyr Asp Trp Val Thr Val  
 130 135 140  
 Asn His Glu Gly Arg Ile Val Glu Glu Gln Leu Ile Glu Thr Leu Ser  
 145 150 155 160  
 Pro Arg Ser Leu Leu Phe Ser Leu Ser Ala Ala His Gly Leu Thr Gly  
 165 170 175  
 Val Ile Gln Pro Leu Asp Pro Leu Leu Ser Leu Cys Lys Asp Arg Arg  
 180 185 190  
 Ile Leu Leu His Leu Asp Ile Ser Asp Ile Leu Gly Arg Ala Pro Leu  
 195 200 205  
 Thr Pro Glu Ile Leu Asn Ala Asp Ile Ile Thr Phe Ser Ser Ala Ala  
 210 215 220  
 Leu Gly Gly Met Gly Ser Ile Gly Gly Ile Phe Ile Arg Lys Ser Leu  
 225 230 235 240  
 Glu Arg Val Phe Ser Ser Trp Phe Pro Pro His Thr Ser Ala Ser Leu  
 245 250 255  
 Cys Phe Ser Ala Val Ala Ala Met Glu Thr Ala Cys Glu Glu Arg Ile  
 260 265 270  
 Ser Ala Leu Pro Leu Phe Thr Phe His Thr Ser Asn Leu Cys Lys Lys  
 275 280 285  
 Leu Ile Gln Glu Leu Gln Ser Val Leu Pro Ser Ile Gln Leu Ala Phe  
 290 295 300  
 Ser Glu Val Gln Asn Arg Leu Pro Asn Ile Val Val Ala Ala Ile Pro  
 305 310 315 320  
 Asp Ile Pro Ala Glu Ser Leu Ala Phe His Leu His Gln Gln Gly Ile  
 325 330 335  
 Tyr Pro Ser Leu Gly Tyr Glu Arg Phe Gln Pro Leu Ala Gln Val Leu  
 340 345 350  
 Gln Asn Cys Gly Ile Ser Pro Phe Leu Cys His Ser Ala Leu His Phe  
 355 360 365  
 Ser Leu Thr Glu Arg Ser Lys Asp Leu Glu Phe Ser Lys Leu Ala Arg  
 370 375 380  
 Ala Met His Asp Ala Ile Lys His Leu Thr Pro Leu Leu Gly Ser Ser  
 385 390 395 400  
 Ser

&lt;210&gt;929

&lt;211&gt;228

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;929

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Met Ala Leu Leu Ile Leu Leu Arg His Gly Gln Ser Val Trp Asn Glu
 1           5           10           15
Lys Asn Leu Phe Ser Gly Trp Val Asp Ile Pro Leu Ser Gln Glu Gly
          20           25           30
Ile Glu Glu Ala Phe Ser Ala Gly Arg Ala Ile Gln Asn Leu Pro Ile
          35           40           45
Asp Cys Ile Phe Thr Ser Thr Leu Val Arg Ser Leu Met Thr Ala Leu
          50           55           60
Leu Ala Met Thr Asn His His Ser Lys Lys Ile Pro Tyr Ile Val His
          65           70           75           80
Glu Asp Pro Lys Ala Lys Glu Met Ser Arg Ile Tyr Ser Ala Glu Glu
          85           90           95
Glu Asn Asn Met Ile Pro Leu Tyr Gln Ser Ser Ala Leu Asn Glu Arg
          100          105          110
Met Tyr Gly Glu Leu Gln Gly Lys Asn Lys Lys Gln Thr Ala Glu Gln
          115          120          125
Phe Gly Glu Glu Arg Val Lys Leu Trp Arg Arg Ser Tyr Lys Thr Ala
          130          135          140
Pro Pro Gln Gly Glu Ser Leu Tyr Asp Thr Lys Gln Arg Thr Leu Pro
          145          150          155          160
Tyr Phe Glu Lys Asn Ile Leu Pro Gln Leu Gln Asn Gly Lys Asn Val
          165          170          175
Phe Val Ser Ala His Gly Asn Ser Leu Arg Ser Leu Ile Met Asp Leu
          180          185          190
Glu Lys Leu Ser Glu Glu Glu Val Leu Ser Leu Glu Leu Pro Thr Gly
          195          200          205
Lys Pro Val Val Tyr Gln Trp Lys Asn His Lys Ile Glu Lys His Pro
          210          215          220
Glu Phe Phe Gly
225

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&lt;210&gt;930

&lt;211&gt;235

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;930

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Val Thr Lys Val Arg Leu Asn Lys Phe Leu Ala Ser Ala Gly Val Ala
 1           5           10           15
Ser Arg Arg Lys Cys Asp Glu Ile Ile Phe Ser Gly Ser Val Thr Val
          20           25           30
Asn Gly Arg Val Ala Glu Gly Pro Phe Val Leu Val Asp Pro Glu Asp
          35           40           45
Lys Val Gln Val Gly Gly Thr Ser Val His Leu Thr Lys Lys Val Tyr
          50           55           60
Phe Met Val His Lys Ala Ile Gly Tyr Leu Cys Ser Ser Glu Lys Lys
          65           70           75           80
Phe Pro Gly Thr Lys Leu Val Ile Asp Leu Phe Ala His Leu Pro Tyr
          85           90           95
Arg Val Phe Thr Val Gly Arg Leu Asp Lys Glu Thr Ser Gly Leu Ile
          100          105          110
Leu Val Thr Asn Asp Gly Glu Phe Ala Asn Lys Ile Ile His Pro Ser
          115          120          125
Ser Gly Ile Thr Lys Glu Tyr Leu Leu Lys Val Ser Arg Asp Val Ser
          130          135          140
Ala Lys Asp Leu Gly Lys Leu Met Glu Gly Thr Phe Ile Asp Gly Lys
          145          150          155          160
His Val Arg Pro Val Ser Val Thr Lys Ile Arg Arg Gly Thr Val Lys
          165          170          175
Ile Val Val Ser Glu Gly Lys Lys His Glu Ile Arg Leu Phe Ala Asp
          180          185          190

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Ala Ala Gly Leu Pro Ile Leu Glu Leu Lys Arg Ile Arg Ile Gly Ser  
 195 200 205  
 Leu Val Leu Gly Gly Leu Arg Tyr Gly Glu Tyr Arg Glu Leu Thr Asp  
 210 215 220  
 Ala Glu Leu Gly Thr Tyr Met Lys Leu Ser Asp  
 225 230 235

&lt;210&gt;931

&lt;211&gt;193

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;931

Asn Met Lys Val Ile Tyr Tyr Glu Ile Glu Glu Ile Pro Ser Thr Asn  
 1 5 10 15  
 Thr Met Ala Lys Ser Tyr Met His Leu Trp Asp Pro Tyr Ala Leu Thr  
 20 25 30  
 Val Ile Ser Thr Lys Cys Gln Thr Ala Gly Thr Gly Lys Phe Gly Lys  
 35 40 45  
 Ser Trp Lys Ser Ser Lys Gly Asp Leu Leu Asn Thr Phe Cys Phe Phe  
 50 55 60  
 Ile Thr Asp Leu His Ile Asp Val Ser Arg Leu Phe Arg Leu Gly Thr  
 65 70 75 80  
 Glu Ala Val Val Ala Leu Cys Lys Asp Leu Gly Ile Thr Glu Ala Lys  
 85 90 95  
 Ile Lys Trp Pro Asn Asp Val Leu Val His Gly Glu Lys Leu Cys Gly  
 100 105 110  
 Val Leu Pro Glu Thr Leu Pro Val Glu Gly Leu Leu Gly Val Val Leu  
 115 120 125  
 Gly Ile Gly Leu Asn Gly Asn Thr Thr Lys Gln Ala Leu Lys Asp Val  
 130 135 140  
 Gly Gln Pro Ala Thr Ser Leu Gln Glu Ile Leu Gly His Pro Ile Asp  
 145 150 155 160  
 Leu Glu Thr Thr Arg Glu Leu Leu Ile His His Leu Leu Gly Val Leu  
 165 170 175  
 Gln Glu Asn Leu Pro Asp Ser Leu Ala Thr Lys Ser Asn Arg Gly Asn  
 180 185 190  
 Ile

&lt;210&gt;932

&lt;211&gt;421

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;932

Cys Ile Arg Ile Pro Gln Met His Ile Gly Phe Cys His Cys Val Arg  
 1 5 10 15  
 Gly Gly Asn Phe Phe Tyr Phe Val Ile Asn Asn Phe His Ile Leu Glu  
 20 25 30  
 Ile Tyr Ser Leu Leu Asn Ser Asn Thr Ile Met Arg Tyr His Lys Tyr  
 35 40 45  
 Phe Arg Tyr Val Asn Ser Trp Val Phe Leu Val Val Leu Thr Leu Met  
 50 55 60  
 Leu Leu Ser Val Val Val Ile Ser Ser Met Asp Pro Thr Ala Met Leu  
 65 70 75 80  
 Val Thr Ser Ser Lys Gly Leu Leu Thr Asn Lys Ser Ile Met Gln Leu  
 85 90 95  
 Arg His Phe Ala Leu Gly Trp Val Val Phe Phe Ile Cys Ala Tyr Phe  
 100 105 110  
 Asp Tyr His Leu Phe Lys Arg Trp Ala Trp Val Leu Tyr Phe Phe Met  
 115 120 125  
 Ile Cys Ala Leu Val Gly Leu Phe Phe Val Pro Ser Val Gln Asn Val  
 130 135 140  
 His Arg Trp Tyr Arg Ile Pro Phe Ile His Met Ser Val Glu Pro Ser  
 145 150 155 160  
 Glu Tyr Gly Lys Leu Val Ile Val Ile Met Leu Ser Tyr Ile Leu Glu  
 165 170 175

Ser Arg Lys Ala Asp Ile Thr Ser Lys Thr Thr Ala Phe Leu Ala Cys  
 180 185 190  
 Leu Val Val Ala Leu Pro Phe Phe Leu Ile Leu Lys Glu Pro Asp Leu  
 195 200 205  
 Gly Thr Ala Leu Val Leu Cys Pro Val Thr Leu Thr Ile Phe Tyr Leu  
 210 215 220  
 Ser Asn Val His Ser Leu Leu Val Lys Phe Cys Thr Val Val Ala Thr  
 225 230 235 240  
 Ile Gly Ile Ile Gly Ser Leu Leu Ile Phe Ser Gly Ile Val Ser His  
 245 250 255  
 Gln Lys Val Lys Pro Tyr Ala Leu Lys Val Ile Lys Glu Tyr Gln Tyr  
 260 265 270  
 Glu Arg Leu Ser Pro Ser Asn His His Gln Arg Ala Ser Leu Ile Ser  
 275 280 285  
 Ile Gly Leu Gly Gly Ile Arg Gly Arg Gly Trp Lys Thr Gly Glu Phe  
 290 295 300  
 Ala Gly Arg Gly Trp Leu Pro Tyr Gly Tyr Thr Asp Ser Val Phe Ser  
 305 310 315 320  
 Ala Leu Gly Glu Glu Phe Gly Leu Leu Gly Leu Leu Phe Thr Leu Gly  
 325 330 335  
 Leu Phe Tyr Cys Leu Ile Cys Phe Gly Cys Arg Thr Val Ala Val Ala  
 340 345 350  
 Thr Asp Asp Phe Gly Lys Leu Leu Ala Ala Gly Ile Thr Val Tyr Leu  
 355 360 365  
 Ala Met His Val Leu Ile Asn Ile Ser Met Met Cys Gly Leu Leu Pro  
 370 375 380  
 Ile Thr Gly Val Pro Leu Ile Leu Ile Ser Tyr Gly Gly Ser Ser Val  
 385 390 395 400  
 Ile Ser Thr Met Ala Ser Leu Gly Val Leu Gln Ser Ile Tyr Ser His  
 405 410 415  
 Arg Phe Ala Lys Tyr  
 420

&lt;210&gt;933

&lt;211&gt;392

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;933

Ile Phe Phe Ser Ile Cys Ser Leu Tyr Phe Cys Asn Cys Leu Trp Asn  
 1 5 10 15  
 Cys Pro Phe Gly Ser Phe Ile Tyr Phe His Ser Ile Val Arg Thr Ser  
 20 25 30  
 Glu Cys Ile Leu Pro Cys Pro Ser Val Ser Tyr Cys Ser Val Ser Val  
 35 40 45  
 Cys Phe Asn His Cys Asp Ser Tyr Cys Leu Phe Lys Cys Tyr Gln Cys  
 50 55 60  
 Leu Cys Glu Thr Trp Gly Ser Asn Glu Arg Arg Cys Val Leu Asp Arg  
 65 70 75 80  
 Leu Val Ser Cys Asn Ser Val Val Met Asp Lys Thr Gly Thr Leu Thr  
 85 90 95  
 Thr Gly Glu Leu Thr Cys Ile Gly Cys Asp Tyr Phe Gly Ser Lys Asn  
 100 105 110  
 Glu Thr Phe Phe Pro Ser Val Leu Ala Leu Glu Gln Ser Ser Ser His  
 115 120 125  
 Pro Ile Ala Glu Ala Ile Val Ser Tyr Leu Met Glu Gln Lys Val Ser  
 130 135 140  
 Ser Leu Pro Ala Asp Arg Tyr Leu Thr Val Pro Gly Glu Gly Val Arg  
 145 150 155 160  
 Gly Tyr Phe Asn Glu Gln Glu Ala Phe Val Gly Arg Val Glu Thr Gly  
 165 170 175  
 Leu Gly Lys Val Pro Ser Glu Tyr Leu Glu Asp Ile Glu Glu Lys Ile  
 180 185 190  
 Tyr Gln Ala Lys Gln His Gly Glu Ile Cys Ser Leu Ala Tyr Val Gly  
 195 200 205  
 Asn Ser Phe Ala Leu Phe Tyr Phe Arg Asp Ile Pro Arg Pro Gln Ala

210 215 220  
 Lys Glu Ile Ile Cln Asp Leu Lys Asp Leu Gly Tyr Pro Val Ser Met  
 225 230 235 240  
 Leu Thr Gly Asp His Lys Val Ser Ala Glu Asn Thr Ala Glu Ile Leu  
 245 250 255  
 Gly Ile Ser Glu Val Phe Phe Asp Leu Thr Pro Glu Asp Lys Leu Ala  
 260 265 270  
 Lys Ile Arg Glu Leu Ala Thr Gln Arg Gln Ile Met Met Val Gly Asp  
 275 280 285  
 Gly Ile Asn Asp Ala Pro Ala Leu Ala Gln Ala Thr Val Gly Ile Ala  
 290 295 300  
 Met Gly Glu Ala Gly Ser Ala Thr Ala Ile Glu Ala Ala Asp Ile Val  
 305 310 315 320  
 Leu Leu His Asp Ser Leu Ser Ser Leu Pro Trp Ile Ile Gln Lys Ala  
 325 330 335  
 Lys Gln Thr Lys Lys Val Val Ser Gln Asn Leu Ala Leu Ala Leu Ala  
 340 345 350  
 Ile Ile Leu Leu Val Ser Trp Pro Ala Ser Leu Gly Ile Ile Pro Leu  
 355 360 365  
 Trp Leu Ala Val Ile Leu His Glu Gly Ser Thr Val Ile Val Gly Leu  
 370 375 380  
 Asn Ala Leu Arg Leu Leu Lys Ser  
 385 390  
 <210>934  
 <211>373  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>934  
 Asn Phe Arg Asn Gly Leu Gly Val Arg Asp Leu His His Phe Arg Glu  
 1 5 10 15  
 Tyr Tyr Leu Ile Ile Asn Glu Ile Ile Ile Thr Gly Arg Tyr Val Phe  
 20 25 30  
 Ser Arg Leu Phe Phe Thr Ser Phe Ser Ala Glu Val Val Asn Thr Phe  
 35 40 45  
 Phe Glu Ser Gly Met Ser Glu Asp Thr Ser Pro Leu Leu Ser Lys Gln  
 50 55 60  
 Asn Arg Lys Leu Ser His Asn Leu Pro Leu Lys Ser Ala Tyr Leu Ser  
 65 70 75 80  
 Leu Gly Thr Tyr Leu Ile Ala Leu Leu Ser Phe Trp Leu His Ala Lys  
 85 90 95  
 Asn Leu Ser Asn Leu Phe Val Val Phe Thr Phe Phe Leu Ala Gly Thr  
 100 105 110  
 Pro Ala Leu Ile Lys Ser Leu Val Asn Ile Cys Gln Lys Val Val Asn  
 115 120 125  
 Ile Asp Ile Leu Met Thr Ser Ala Pro Phe Gly Ser Ile Phe Ile Gly  
 130 135 140  
 Gly Ala Leu Glu Gly Ala Leu Leu Leu Val Leu Phe Ala Ile Ser Glu  
 145 150 155 160  
 Ala Leu Gly Gln Met Val Ser Gly Lys Ala Lys Ser Thr Leu Val Ser  
 165 170 175  
 Leu Lys Gln Leu Ala Pro Thr Thr Gly Trp Leu Val Leu Glu Asp Gly  
 180 185 190  
 Asn Leu Gln Lys Val Ala Ile Asn Lys Ile Glu Val Gly Asn Ile Leu  
 195 200 205  
 Arg Ile Lys Ser Gly Glu Val Val Pro Leu Asp Gly Glu Ile Leu His  
 210 215 220  
 Gly Ser Ser Ser Ile Asn Leu Met His Leu Thr Gly Glu Lys Val Pro  
 225 230 235 240  
 Lys Ser Cys His Pro Gly Ser Ile Val Pro Ala Gly Ala His Asn Met  
 245 250 255  
 Glu Gly Ser Phe Asp Leu Arg Val Leu Arg Thr Gly Ser Asp Ser Thr  
 260 265 270  
 Ile Ala His Ile Ile Asn Leu Val Ile Gln Ala Gln Asn Ser Lys Pro  
 275 280 285



Arg Leu Gln Gln Arg Leu Asp Lys Tyr Ser Ser Val Tyr Ala Leu Ser  
 290 295 300  
 Ile Phe Ala Ile Ala Cys Gly Ile Ala Leu Leu Val Pro Leu Phe Thr  
 305 310 315 320  
 Ser Ile Pro Leu Leu Gly Pro Gln Ser Ala Phe Tyr Arg Ala Leu Ala  
 325 330 335  
 Phe Leu Ile Ala Ala Ser Pro Cys Ala Leu Ile Ile Ala Ile Pro Ile  
 340 345 350  
 Ala Tyr Leu Ser Ala Ile Asn Ala Cys Ala Lys His Gly Val Leu Xaa  
 355 360 365  
 Lys Gly Gly Val Phe  
 370

&lt;210&gt;935

&lt;211&gt;274

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;935

Glu Gly Trp Arg Phe Phe Phe Pro Lys Thr Ser Glu Asn Thr Ser Asp  
 1 5 10 15  
 Cys Arg Gln His Gln Ile Leu Arg Lys Ile Met Thr Gln Asp Pro His  
 20 25 30  
 Asp His Phe Lys Ser Arg Thr Pro Glu Asp His Ile Lys His Val Arg  
 35 40 45  
 Asp Lys His Arg Val Cys Lys Gly Glu Pro His Thr Thr Phe Lys Gly  
 50 55 60  
 Phe Phe Tyr His Leu Ala Asn Asn Ala Leu Ser Thr Gly Val Phe Ile  
 65 70 75 80  
 Phe Phe Ile Arg Thr Leu Phe Phe Leu Ile Pro Thr Asn Arg Ala Leu  
 85 90 95  
 Gln Val Lys Ser Leu Ile Ser Leu Gly Val Gly Trp Thr Phe Tyr His  
 100 105 110  
 Gly Cys Leu Lys Ala Arg Lys Ala Trp Ala Tyr Met Glu Leu Ser His  
 115 120 125  
 Arg Ser Met Leu Glu Glu Lys Asn Glu Ile Glu Glu Asn Phe Glu Gln  
 130 135 140  
 Glu Lys Ile Glu Leu Arg Ile Leu Phe Glu Asn Gln Gly Phe Lys Asp  
 145 150 155 160  
 Pro Leu Leu Gln Glu Met Val Glu Tyr Val Cys Ser Asp Ser Thr Leu  
 165 170 175  
 Leu Leu Asp Thr Met Ile Arg Glu Glu Leu Tyr Ile Arg Lys Glu Asp  
 180 185 190  
 Leu Pro His Pro Leu Ile Gln Gly Gly Ser Arg Ile Leu Gly Gly Leu  
 195 200 205  
 Cys Gly Leu Ala Ile Phe Leu Pro Leu Val Leu Cys Ile Ser Tyr Thr  
 210 215 220  
 Leu Ala Gly Val Phe Ser Ala Leu Met Val Leu Val Leu Ser Phe Leu  
 225 230 235 240  
 Lys Ala Lys Ile Leu Lys Asn Asp Lys Ile Ser Glu Met Val Trp Val  
 245 250 255  
 Leu Gly Ile Phe Ile Thr Ser Ala Ser Ile Ile Ser Ser Leu Met Lys  
 260 265 270  
 Leu Leu

&lt;210&gt;936

&lt;211&gt;466

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;936

Val Ile Leu Pro Phe Ser Pro Ile Ser Ile Ala Arg Arg Ile Lys Lys  
 1 5 10 15  
 Ser Cys Cys Ser Glu Lys Ser Ser Ile Tyr Ser His Phe Cys Thr Leu  
 20 25 30  
 Leu Leu Asn Asn Glu Thr Ser Met Leu Asp Ile Lys Ile Ile Arg Lys  
 35 40 45

Thr Pro Glu Glu Cys Glu Thr Arg Leu Arg Lys Lys Asp Pro Lys Ile  
 50 55 60  
 Ser Leu Glu Pro Val Leu Ser Leu Asp Lys Glu Val Arg Gln Leu Lys  
 65 70 75 80  
 Thr Asp Ser Glu Thr Leu Gln Ala Gln Arg Arg Leu Leu Ser Gln Asp  
 85 90 95  
 Ile His Lys Ala Lys Thr Gln Gly Val Asp Ala Thr Asn Leu Ile Gln  
 100 105 110  
 Glu Val Glu Thr Leu Ala Ala Asp Leu Glu Lys Ile Glu Gln His Leu  
 115 120 125  
 Asp Gln Lys Asn Ala Gln Leu His Glu Leu Leu Ser His Leu Pro Asn  
 130 135 140  
 Tyr Pro Ala Asp Asp Ile Pro Val Ser Glu Asp Lys Ala Gly Asn Gln  
 145 150 155 160  
 Val Ile Lys Ser Val Gly Asp Leu Pro Ile Phe Ser Phe Pro Pro Lys  
 165 170 175  
 His His Leu Glu Leu Asn Gln Glu Leu Asp Ile Leu Asp Phe Gln Ala  
 180 185 190  
 Ala Ala Lys Thr Thr Gly Ser Gly Trp Pro Ala Tyr Lys Asn Arg Gly  
 195 200 205  
 Val Leu Leu Glu Trp Ala Leu Leu Thr Tyr Met Leu Gln Lys Gln Ala  
 210 215 220  
 Ala His Gly Phe Gln Leu Trp Leu Pro Pro Leu Leu Val Lys Lys Glu  
 225 230 235 240  
 Ile Leu Phe Gly Ser Gly Gln Ile Pro Lys Phe Asp Gly Gln Tyr Tyr  
 245 250 255  
 Arg Val Glu Asp Gly Glu Gln Tyr Leu Tyr Leu Ile Pro Thr Ala Glu  
 260 265 270  
 Val Val Leu Asn Gly Phe Arg Ser Gln Asp Ile Leu Thr Glu Lys Glu  
 275 280 285  
 Leu Pro Leu Tyr Tyr Ala Ala Cys Thr Pro Cys Phe Arg Arg Glu Ala  
 290 295 300  
 Gly Ala Ala Gly Ala Gln Glu Arg Gly Leu Val Arg Val His Gln Phe  
 305 310 315 320  
 His Lys Val Glu Met Phe Ala Phe Thr Thr Pro Asn Gln Asp Asp Ile  
 325 330 335  
 Ala Tyr Glu Lys Met Leu Ser Ile Val Glu Glu Met Leu Thr Glu Leu  
 340 345 350  
 Lys Leu Pro Tyr Arg Leu Ser Leu Leu Ser Thr Gly Asp Met Ser Phe  
 355 360 365  
 Thr Xaa Ser Lys Thr Ile Asp Ala Glu Val Trp Leu Pro Gly Gln Lys  
 370 375 380  
 Ala Phe Tyr Glu Val Ser Ser Ile Ser Gln Cys Thr Asp Phe Gln Ser  
 385 390 395 400  
 Arg Arg Ser Gly Thr Arg Tyr Lys Asp Ser Gln Gly Lys Leu Gln Phe  
 405 410 415  
 Val His Thr Leu Asn Gly Ser Gly Leu Ala Thr Pro Arg Leu Leu Val  
 420 425 430  
 Ala Ile Leu Glu Asn Asn Gln Gln Ala Asp Gly Ser Val Val Ile Pro  
 435 440 445  
 Glu Val Leu Arg Pro Tyr Leu Gly Gly Leu Glu Ile Leu Leu Pro Lys  
 450 455 460  
 Asp Gln  
 465  
 <210>937  
 <211>376  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>937  
 Met Glu Asp Phe Ser Glu Gln Gln Leu Phe Phe Met Arg Arg Ala Ile  
 1 5 10 15  
 Glu Ile Gly Glu Lys Gly Arg Ile Thr Ala Pro Pro Asn Pro Trp Val  
 20 25 30  
 Gly Cys Val Val Val Gln Glu Asn Arg Ile Ile Gly Glu Gly Phe His

35 40 45  
 Ala Tyr Ala Gly Gly Pro His Ala Glu Glu Leu Ala Ile Gln Asn Ala  
 50 55 60  
 Ser Met Pro Ile Ser Gly Ser Asp Val Tyr Val Ser Leu Glu Pro Cys  
 65 70 75 80  
 Ser His Phe Gly Ser Cys Pro Pro Cys Ala Asn Leu Leu Ile Lys His  
 85 90 95  
 Lys Val Ser Arg Val Phe Val Ala Leu Val Asp Pro Asp Pro Lys Val  
 100 105 110  
 Ala Gly Gln Gly Ile Ala Met Leu Arg Gln Ala Gly Ile Gln Val Tyr  
 115 120 125  
 Val Gly Ile Gly Glu Ser Glu Ala Gln Ala Ser Leu Gln Pro Tyr Leu  
 130 135 140  
 Tyr Gln Arg Thr His Asn Phe Pro Trp Thr Ile Leu Lys Ser Ala Ala  
 145 150 155 160  
 Ser Val Asp Gly Gln Val Ala Asp Ser Gln Gly Lys Ser Gln Trp Ile  
 165 170 175  
 Thr Cys Pro Glu Ala Arg His Asp Val Gly Lys Leu Arg Ala Glu Ser  
 180 185 190  
 Gln Ala Ile Leu Val Gly Ser Arg Thr Val Leu Ser Asp Asp Pro Trp  
 195 200 205  
 Leu Thr Ala Arg Gln Pro Gln Gly Met Leu Tyr Pro Lys Gln Pro Leu  
 210 215 220  
 Arg Val Val Leu Asp Ser Arg Gly Ser Val Pro Pro Thr Ser Lys Val  
 225 230 235 240  
 Phe Asp Lys Thr Ser Pro Thr Leu Tyr Val Thr Thr Glu Arg Cys Pro  
 245 250 255  
 Glu Asn Tyr Ile Lys Val Leu Asp Ser Leu Asp Val Pro Val Leu Leu  
 260 265 270  
 Thr Glu Ser Thr Pro Ser Gly Val Asp Leu His Lys Val Tyr Glu Tyr  
 275 280 285  
 Leu Ala Gln Lys Lys Ile Leu Gln Val Leu Val Glu Gly Gly Thr Thr  
 290 295 300  
 Leu His Thr Ser Leu Leu Lys Glu Arg Phe Val Asn Ser Leu Val Leu  
 305 310 315 320  
 Tyr Ser Gly Pro Met Ile Leu Gly Asp Gln Lys Arg Pro Leu Val Gly  
 325 330 335  
 Val Leu Gly Asn Leu Leu Glu Ser Ala Ser Pro Leu Thr Leu Lys Ser  
 340 345 350  
 Ser Gln Ile Leu Gly Asn Ser Leu Lys Val Val Trp Glu Ile Ser Pro  
 355 360 365  
 Gln Val Phe Glu Pro Ile Arg Asn  
 370 375

&lt;210&gt;938

&lt;211&gt;418

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;938

Met Ile Glu Thr Arg Glu Glu Val Gly Ser Ala Asn Phe Val Ser Leu  
 1 5 10 15  
 Glu Arg Ala Ile Glu Asp Leu Arg Ala Gly Lys Phe Val Ile Val Val  
 20 25 30  
 Asp Glu Ala Ser Arg Glu Asp Glu Gly Asp Leu Ile Ile Ala Gly Glu  
 35 40 45  
 Lys Ile Thr Val Glu Lys Met Thr Phe Leu Leu Gln His Thr Thr Gly  
 50 55 60  
 Val Val Cys Ala Ala Leu Ser Gln Glu Arg Leu Leu Ser Leu Asp Leu  
 65 70 75 80  
 Pro Pro Met Val Lys Asp Asn Arg Cys Arg Phe Lys Thr Pro Phe Thr  
 85 90 95  
 Val Ser Val Asp Ala Ala His Gly Val Thr Thr Gly Val Ser Ala Ala  
 100 105 110  
 Asp Arg Thr Lys Val Val Gln Leu Leu Ala Asp Pro Lys Ser Lys Pro  
 115 120 125

Glu Asp Phe Ile Ser Pro Gly His Phe Phe Pro Leu Ala Ser Ser Pro  
 130 135 140  
 Gly Gly Val Leu Lys Arg Ala Gly His Thr Glu Ser Thr Val Asp Leu  
 145 150 155 160  
 Met Glu Leu Ala Gly Leu Gln Pro Cys Gly Val Leu Ala Glu Leu Val  
 165 170 175  
 Asn Glu Asp Tyr Ser Met Met Arg Leu Pro Gln Ile Leu Glu Phe Ala  
 180 185 190  
 Arg Lys His Asn Ile Ala Val Ile Pro Val Thr Ser Ile Ala His  
 195 200 205  
 Arg Met Leu Ser Asp Arg Leu Val Ser Lys Ile Ser Ser Ala Arg Leu  
 210 215 220  
 Pro Thr Ile Tyr Gly Asp Phe Thr Ile His Val Tyr Glu Ser Leu Leu  
 225 230 235 240  
 Glu Gly Met Gln His Leu Ala Leu Val Lys Gly Asn Val Ala Gly Lys  
 245 250 255  
 Ser Asn Val Leu Val Arg Val His Ser Glu Cys Val Thr Gly Asp Ile  
 260 265 270  
 Leu Gly Ser Lys Arg Cys Asp Cys Gly Glu Gln Leu Ser Ser Ala Met  
 275 280 285  
 Ser Tyr Ile Ala Glu Lys Gly Thr Gly Val Leu Val Tyr Leu Arg Gly  
 290 295 300  
 Gln Glu Gly Arg Gly Ile Gly Leu Gly His Lys Val Arg Ala Tyr Ala  
 305 310 315 320  
 Leu Gln Asp Asn Gly Tyr Asp Thr Val Asp Ala Asn Leu Ala Met Gly  
 325 330 335  
 Phe Pro Val Asp Ser Arg Glu Tyr Gly Ile Gly Ala Gln Ile Xaa Ile  
 340 345 350  
 Asp Leu Xaa Leu Thr Thr Ile Lys Leu Ile Thr His Asn Pro Gln Lys  
 355 360 365  
 Tyr Phe Gly Leu Gln Gly Phe Gly Leu Ser Ile Thr Glu Arg Val Pro  
 370 375 380  
 Leu Pro Val Arg Ile Ser Glu Asp Asn Glu Gln Tyr Leu Arg Thr Lys  
 385 390 395 400  
 Gln Glu Arg Met Gly His Trp Leu Asp Leu Pro Cys Cys Asn Asn Arg  
 405 410 415  
 Val Gln

&lt;210&gt;939

&lt;211&gt;154

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;939

Met Lys Thr Leu Lys Gly His Leu Ser Ala Lys Asn Leu Arg Ile Ala  
 1 5 10 15  
 Ile Val Gly Ser Cys Phe Asn Gln Ala Met Ala Asp Ala Leu Val Ser  
 20 25 30  
 Gly Thr Gln Glu Thr Phe Leu Lys Phe Gly Gly Ser Glu Asp Gly Leu  
 35 40 45  
 Met Thr Ile Arg Val Pro Gly Ala Phe Glu Ile Pro Cys Thr Ile Lys  
 50 55 60  
 Lys Leu Leu Ser Ser Glu Arg Lys Phe Asp Ala Ile Val Ala Cys Gly  
 65 70 75 80  
 Val Leu Ile Gln Gly Glu Thr Asp His Tyr Asn Gln Ile Val Asn Gln  
 85 90 95  
 Val Ala Ala Gly Ile Gly Ala Leu Ser Leu Glu Phe Cys Leu Pro Ile  
 100 105 110  
 Thr Leu Ser Ile Val Ala Ala Pro Ser Ala Glu Ile Ala Trp Gln Arg  
 115 120 125  
 Ser Gly Ile Lys Gly Arg His Leu Gly Val Ser Gly Met Thr Thr Ala  
 130 135 140  
 Ile Glu Met Ala Thr Leu Phe Thr Gln Ile  
 145 150  
 <210>940

&lt;211&gt;472

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;940

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Leu Ile Ser Leu Asn Leu Lys Ile Leu Thr Lys Gln Arg Asp Arg Glu
 1          5          10          15
Glu Ala Ser Met Leu Lys Ile Leu Lys Ile Lys Val Leu Val Phe Pro
 20          25          30
Leu Ala Leu Leu Met Gly Cys Asn Ser Ile Gly Tyr Ala Gly Pro Gln
 35          40          45
Gly Ser Leu Gln Thr Asn Ser Gln Thr Lys Val Lys Ile Gly Ser Glu
 50          55          60
Val Trp Ile Glu Gln Lys Leu Arg Gln Tyr Pro Glu Leu Leu Trp Leu
 65          70          75          80
Thr Glu Ser Gly Gly Ala Pro Leu Leu Thr Ser Thr Pro Ile Asp Met
 85          90          95
Ala Tyr Ser Glu Lys Leu Phe Asn Lys Lys Val Pro Ala Leu Asp Ile
100          105          110
Ala Ile Arg Ser Met Ile His Leu His Leu Leu Ile Gln Gly Ser Arg
115          120          125
Gln Ser Tyr Met Gln Leu Ser Gln Ile Leu Pro Ser Glu Glu Gly Gly
130          135          140
Met Thr Phe Lys Gln Phe Gln Thr Ala His Lys Gln Leu Leu Phe Phe
145          150          155          160
Leu Asn Ser Pro Lys Ser Phe Asp Asn Thr Leu Arg Ile Leu Glu Thr
165          170          175          180
Ala Ile Val Leu Arg His Val Gly Cys Ser Ala Lys Ala Val Thr Thr
185          190          195
Phe Lys Pro Tyr Phe Thr Asp Ser Cys Pro Gln Ser Phe Tyr Ala Lys
200          205
Ala Leu His Val Leu Arg Thr Phe Pro Glu Leu Cys Pro Ser Tyr Ala
210          215          220
Arg Leu Ser Pro Glu Gln Gln Glu Val Leu Leu Ser Leu Arg Arg Leu
225          230          235          240
Gly Asn Tyr Asp Ser Leu Leu Asn Leu Thr Glu Val Pro Ser Ala Gln
245          250          255
Leu Leu Ser Ala Trp Arg Thr Arg Arg Ser Leu Ala Ile Leu Asp Leu
260          265          270
Tyr Leu Tyr Cys Leu Asp Thr Cys Gly Asp Lys Asn Cys Ser Gln Glu
275          280          285
Phe Tyr Ile Asn Phe Ala Pro Leu Leu Ser Met Leu Gln Gln His Ala
290          295          300
Thr Ile Glu Glu Ala Phe Ser Arg Tyr Phe Thr Tyr Arg Ala Asn Arg
305          310          315          320
Leu Gly Phe Glu Gly Thr Ser Arg Thr Asp Met Thr Leu Val Arg Leu
325          330          335
Ala Thr Leu Met Asn Leu Ser Pro Ser Glu Ala Ser Thr Leu Ala Trp
340          345          350
Ser Phe Lys Asn Leu Pro Ser Asp Glu Ala Glu Asn Leu Val Asn Ser
355          360          365
Phe Tyr Thr Val Gln Gly Glu His Ile Pro Leu Thr Phe Arg Gly Leu
370          375          380
Pro Ser Leu Val Ala Gly Leu Ser Val Ala Thr His Gly Ser Thr Val
385          390          395          400
Ser Pro Glu Asn Arg Leu Arg Gln Leu Tyr Ser Thr Met Leu Ser Leu
405          410          415
Leu Val Lys Ser Leu Arg Ser His Arg Glu Met Leu Asn Lys Gln Leu
420          425          430
Leu Pro Gln Gly Thr Val Leu Asp Phe Ser Glu Thr Thr Leu Ser Ser
435          440          445
Gly Gly Leu Asp Val Phe Ala Glu Ser Ile Ala Val Arg Ile His Leu
450          455          460
Asn Gly Ala Val Ser Ile Asn Leu
465          470

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&lt;210&gt;941

&lt;211&gt;220

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;941

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Leu Lys Ile Met Lys Arg Val Ile Tyr Lys Thr Ile Phe Cys Gly Leu
 1          5          10          15
Thr Leu Leu Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr
          20          25          30
Asn Leu Glu Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile
          35          40          45
Leu Lys Glu Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg
          50          55          60
Arg Ser Arg Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr
          65          70          75          80
Leu Gln Val Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu
          85          90          95
Gln Asp Glu Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys
          100          105          110
Ser Ser Ile Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu
          115          120          125
Tyr Arg Ile Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala
          130          135          140
Glu Asn Pro Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp
          145          150          155          160
Trp Ile Trp Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln
          165          170          175
Ala Trp Ser Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala
          180          185          190
Ser Thr Leu Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly
          195          200          205
Glu Arg Trp Pro Glu Leu Val Asp Ile Val Ile Thr
          210          215          220

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&lt;310&gt;942

&lt;211&gt;385

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;942

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Gln Glu Ile Leu Ala Arg Glu Ile Ser Pro Glu Cys Cys Arg Leu Ser
 1          5          10          15
Leu Trp Arg Ser Arg Arg Pro Gly Leu Gly Leu Leu Ala Ala Leu Leu
          20          25          30
Gly Ala Ile Val Gln Tyr Ala Gly Ser Tyr Leu Gly Ser Lys Tyr Arg
          35          40          45
Lys Pro Glu Gly Asn Thr Gly Glu Phe Ile Gly Gly Pro Ile Ala Cys
          50          55          60
Leu Ala Phe Gly Met Arg Lys Lys Ile Leu Ala Gly Phe Phe Ala Leu
          65          70          75          80
Phe Thr Ile Met Thr Ala Phe Cys Ala Gly Asn Cys Val Gln Val Ser
          85          90          95
Cys Ile Val Pro Leu Cys Ala Glu Gly Thr Pro Gly Lys Leu Leu Val
          100          105          110
Gly Ile Leu Leu Ala Leu Val Val Ile Pro Val Leu Ala Gly Gly Asn
          115          120          125
Asn Arg Ile Leu Arg Phe Ser Ala Arg Val Ile Pro Phe Ile Ala Gly
          130          135          140
Phe Tyr Cys Ile Ser Cys Gly Ile Ile Leu Phe Gln His Ala Ser Ala
          145          150          155          160
Ile Leu Pro Ala Ile Lys Leu Ile Cys Ser Ser Ala Phe Gly Ile Lys
          165          170          175
Ala Gly Leu Ala Gly Ile Gly Gly Tyr Thr Leu Ser Gln Val Ile Ser
          180          185          190
Thr Gly Ile Asn Arg Ala Val Met Ala Thr Asp Cys Gly Ser Gly Met
          195          200          205

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Val Ser Ile Leu Gln Ala Asn Thr Lys Ser Lys Asn Pro Val Val Asp  
 310 215 220  
 Gly Leu Val Thr Leu Val Pro Pro Val Ile Val Met Val Val Cys Ser  
 225 230 235 240  
 Ile Thr Met Leu Val Leu Ile Val Ser Gly Ala Tyr Ser Ser Gly Ala  
 245 250 255  
 Gln Gly Thr Leu Met Val Met Ser Ala Phe Lys Asn Ser Leu Gly Ser  
 260 265 270  
 Leu Gly Ser Val Ile Val Ile Leu Ala Met Ala Leu Phe Gly Tyr Thr  
 275 280 285  
 Thr Ile Leu Thr Trp Phe Ala Cys Ala Glu Lys Ser Leu Gln Tyr Met  
 290 295 300  
 Ile Pro Gly Arg Arg Ala Asn Leu Trp Leu Lys Ala Ile Tyr Val Leu  
 305 310 315 320  
 Ile Ile Pro Leu Gly Gly Val Ile Asp Met Arg Met Ile Trp Ala Leu  
 325 330 335  
 Ser Asp Thr Gly Phe Ser Gly Met Val Ile Leu Asn Cys Ile Ala Leu  
 340 345 350  
 Ile Ala Leu Leu Lys Asp Val Leu Ser Thr Asn Arg Asp Val Ala Leu  
 355 360 365  
 Leu Lys Glu Arg Glu Cys Ser Val Ala Asp Pro Val Arg Asn Leu Asp  
 370 375 380  
 Ala  
 385

&lt;210&gt;943

&lt;211&gt;110

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;943

Arg Arg Arg Ile Met Gln Leu Leu Ser Pro Ala Phe Ala Tyr Gly Ala  
 1 5 10 15  
 Pro Ile Pro Lys Lys Tyr Thr Cys Gln Gly Ala Gly Ile Ser Pro Pro  
 20 25 30  
 Leu Thr Phe Val Asp Val Pro Gly Ala Ala Gln Ser Leu Ala Leu Ile  
 35 40 45  
 Val Glu Asp Pro Asp Val Pro Lys Glu Ile Arg Ser Asp Gly Leu Trp  
 50 55 60  
 Ile His Trp Ile Val Tyr Asn Leu Ser Thr Thr Ile Thr Asn Leu Ala  
 65 70 75 80  
 Glu Gly Ala Glu Ile Phe Ala Val Gln Gly Leu Asn Thr Ser Gly Lys  
 85 90 95  
 Pro Val Tyr Glu Gly Pro Cys Pro Pro Asp Lys Gln His Arg  
 100 105 110

&lt;210&gt;944

&lt;211&gt;223

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;944

Gly Cys Met Ser Thr Val Thr Thr Glu Pro Cys Ser Ser Ile His Ile  
 1 5 10 15  
 Ser Leu Asn Asn Asp Trp Arg Asp Ser Gln Pro Tyr Ser Leu Asp Arg  
 20 25 30  
 Ala Ser Glu Leu Leu His Phe Arg Phe Leu Pro Ser Leu Val Phe Ser  
 35 40 45  
 Asn Trp Lys Val Glu Gln Gln Ile Glu Thr Leu Cys His Lys Ser Glu  
 50 55 60  
 Lys Arg Arg Leu Ile Ser Pro Leu Ala Lys Trp Leu Gly Lys Leu His  
 65 70 75 80  
 Lys Gln Asp Leu Leu Cys Pro Pro Ala Pro Pro Val Ser Val Cys Trp  
 85 90 95  
 Ile Asn Ala His Val Gly Tyr Gly Val Phe Ala Arg Asp Glu Ile Ala  
 100 105 110  
 Pro Trp Thr Tyr Ile Gly Glu Tyr Thr Gly Ile Leu Arg His Arg Gln  
 115 120 125

Ala Ile Trp Met Asp Glu Asn Asp Tyr Cys Phe Arg Tyr Pro Met Pro  
 130 135 140  
 Leu Phe Thr Leu Arg Tyr Phe Thr Ile Asp Ser Gly Lys Gln Gly Asn  
 145 150 155 160  
 Val Thr Arg Phe Ile Asn His Ser Glu Gln Pro Asn Ala Glu Ala Ile  
 165 170 175  
 Gly Val Phe Ser Glu Gly Leu Phe His Val Ile Ile Arg Thr Ile Ala  
 180 185 190  
 Pro Ile Tyr Ala Gly Gln Glu Ile Cys Tyr His Tyr Gly Pro Leu Tyr  
 195 200 205  
 Trp Lys His Arg Lys Lys Arg Glu Glu Phe Ile Pro Glu Glu Glu  
 210 215 220

&lt;210&gt;945

&lt;211&gt;265

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;945

Met Gln Gly Phe Phe Pro Leu Ala Ser Gly Ser Lys Gly Asn Ser Ala  
 1 5 10 15  
 Tyr Leu Gly Thr Asp Ser Cys Lys Ile Leu Ile Asp Leu Gly Val Ser  
 20 25 30  
 Lys Gln Val Val Thr Arg Glu Leu Leu Ser Met Asn Ile Asp Pro Glu  
 35 40 45  
 Asp Ile Gln Ala Ile Phe Val Thr His Glu His Ser Asp His Ile Ser  
 50 55 60  
 Gly Ile Lys Ser Phe Val Lys Ala Tyr Asn Thr Pro Ile Val Cys Asn  
 65 70 75 80  
 Leu Glu Thr Ala Arg Ala Leu Cys His Leu Leu Asp Ser His Pro Glu  
 85 90 95  
 Phe Lys Ile Phe Ser Thr Gly Ser Ser Phe Cys Phe Gln Asp Leu Glu  
 100 105 110  
 Val Gln Thr Phe Asn Val Pro His Asp Ala Val Asp Pro Val Ala Phe  
 115 120 125  
 Ile Phe His Tyr Arg Glu Glu Lys Leu Gly Phe Cys Thr Asp Leu Gly  
 130 135 140  
 Trp Val Thr Ser Trp Ile Thr His Glu Leu Tyr Asp Cys Asp Tyr Leu  
 145 150 155 160  
 Leu Ile Glu Ser Asn His Ser Pro Glu Leu Val Arg Gln Ser Gln Arg  
 165 170 175  
 Pro Asp Val Tyr Lys Lys Arg Val Leu Ser Lys Leu Gly His Ile Ser  
 180 185 190  
 Asn Gln Glu Cys Gly Gln Leu Leu Gln Lys Ile Ile Thr Pro Lys Leu  
 195 200 205  
 Lys Lys Leu Tyr Leu Ala His Leu Ser Thr Glu Cys Asn Thr Ala Glu  
 210 215 220  
 Leu Ala Leu Ser Thr Val Ser Glu Ser Ile Ala Ser Ile Thr Ser Ile  
 225 230 235 240  
 Ala Pro Glu Ile Ala Leu Ala Gln Gly Ile Thr Ser Pro Ile Tyr Phe  
 245 250 255  
 Ser Arg Leu Glu Val Ala Cys Pro Arg  
 260 265

&lt;210&gt;946

&lt;211&gt;553

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;946

Asp Gly Ser Ile Ser Pro Leu Pro Gln Glu Glu Ile Pro Gly Ser Lys  
 1 5 10 15  
 Lys Glu Ser Phe Phe Leu Thr Pro His Pro Cys Lys Arg Phe Leu Thr  
 20 25 30  
 Lys Phe Val Glu Pro Gln Glu Asn Lys Ala Lys Glu Gly Lys Thr Ile  
 35 40 45  
 Ala Leu Ser Ser Thr Pro Thr Val Val Arg Glu Ser Lys Gly Lys Glu  
 50 55 60



Arg Ala Ala Leu Pro Lys Leu Lys Ser Leu Ala Val Pro Glu Asn Asp  
 65 70 75 80  
 Leu Pro Gln Tyr His Leu Leu Ser Lys Asn Arg Glu Ala Arg Pro Glu  
 85 90 95  
 Ser Leu Gln Ala Glu Leu Glu Arg Lys Ala Leu Ile Leu Lys Gln Thr  
 100 105 110  
 Leu Thr Ser Phe Gly Ile Asp Ala Asp Leu Gly Asn Ile Cys Ser Gly  
 115 120 125  
 Pro Thr Leu Ala Ala Phe Glu Val Leu Pro His Ser Gly Val Lys Val  
 130 135 140  
 Gln Lys Ile Lys Ser Leu Glu Asn Asp Ile Ala Leu Lys Leu Gln Ala  
 145 150 155 160  
 Ser Ser Ile Arg Ile Ile Ala Pro Ile Pro Gly Lys Ala Ala Val Gly  
 165 170 175  
 Ile Glu Ile Pro Thr Pro Phe Pro Gln Ala Val Asn Phe Arg Asp Leu  
 180 185 190  
 Leu Glu Asp Tyr Gln Lys Thr Asn Arg Lys Leu Gln Ile Pro Leu Leu  
 195 200 205  
 Leu Gly Lys Lys Ala Asn Gly Asp Asn Leu Trp Ala Asp Leu Ala Thr  
 210 215 220  
 Met Pro His Leu Ile Ile Ala Gly Thr Thr Gly Ser Gly Lys Ser Val  
 225 230 235 240  
 Cys Ile Asn Thr Ile Val Met Ser Met Ile Met Thr Thr Leu Pro Ser  
 245 250 255  
 Glu Ile Lys Leu Val Ile Ile Asp Pro Lys Lys Val Glu Leu Thr Gly  
 260 265 270  
 Tyr Ser Gln Leu Pro His Met Leu Ser Pro Val Ile Thr Glu Ser Arg  
 275 280 285  
 Glu Val Tyr Asn Ala Leu Val Trp Leu Val Lys Glu Met Glu Ser Arg  
 290 295 300  
 Tyr Glu Ile Leu Arg Tyr Leu Gly Leu Arg Asn Ile Gln Ala Phe Asn  
 305 310 315 320  
 Ser Arg Thr Arg Asn Lys Thr Ile Glu Ala Ser Tyr Asp Arg Glu Ile  
 325 330 335  
 Arg Glu Thr Met Pro Phe Met Val Gly Ile Ile Asp Glu Leu Ser Asp  
 340 345 350  
 Leu Leu Leu Ser Ser Ser Gln Asp Ile Glu Thr Pro Ile Ile Arg Leu  
 355 360 365  
 Ala Gln Met Ala Arg Ala Val Gly Ile His Leu Ile Leu Ala Thr Glu  
 370 375 380  
 Arg Pro Ser Arg Glu Val Ile Thr Gly Leu Ile Lys Ala Asn Phe Pro  
 385 390 395 400  
 Ser Arg Ile Ser Phe Lys Val Ser Asn Lys Val Asn Ser Gln Ile Ile  
 405 410 415  
 Ile Asp Glu Pro Gly Ala Glu Asn Leu Met Gly Asn Gly Asp Met Leu  
 420 425 430  
 Val Leu Leu Pro Ser Val Phe Gly Thr Ile Arg Ala Gln Gly Ala Tyr  
 435 440 445  
 Ile Cys Asp Glu Asp Ile Asn Lys Val Ile Gln Asp Leu Cys Ser Arg  
 450 455 460  
 Phe Pro Thr Gln Tyr Val Ile Pro Ser Phe His Ala Phe Asp Asp Ser  
 465 470 475 480  
 Asp Ser Asp Asn Ser Gly Glu Lys Asp Pro Leu Phe Ala Gln Ala Lys  
 485 490 495  
 Thr Leu Ile Leu Gln Thr Gly Asn Ala Ser Thr Thr Phe Leu Gln Arg  
 500 505 510  
 Lys Leu Lys Ile Gly Tyr Ala Arg Ala Ala Ser Leu Ile Asp Gln Leu  
 515 520 525  
 Glu Glu Ala Arg Ile Ile Gly Pro Ser Glu Gly Ala Lys Pro Arg Gln  
 530 535 540  
 Ile Leu Ile Gln Asn Pro Leu Glu Gly  
 545 550  
 <210>947  
 <211>218

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;947

Pro Met Ile Arg Glu Arg Lys Lys Ser Arg His Pro Arg Leu Pro Thr  
 1 5 10 15  
 Leu Pro Leu Ala Ala Lys Ala Ser Leu Tyr Leu Phe Phe Ala Cys Phe  
 20 25 30  
 Ser Gly Leu Ser Leu Trp Ser Phe His Arg Asp Gln Pro Cys Thr Gln  
 35 40 45  
 Asn Trp Ile Gly Leu Leu Gly Trp Ser Phe Ser Ser Phe Leu Leu Tyr  
 50 55 60  
 Phe Phe Gly Ala Ala Ala Phe Phe Ile Pro Xaa Tyr Phe Leu Trp Leu  
 65 70 75 80  
 Ser Phe Leu Tyr Phe Arg Arg Thr Pro Arg Pro Leu Phe Phe Tyr Lys  
 85 90 95  
 Ala Ala Ala Phe Leu Ser Leu Pro Phe Cys Ser Ala Ile Leu Leu Ser  
 100 105 110  
 Met Leu Ser Pro Val Gly Thr Leu Pro Ala Leu Leu Asp Thr Arg Leu  
 115 120 125  
 Pro Lys Phe Ile Leu Gly Asn Ile Pro Pro Val Ser Tyr Val Gly Gly  
 130 135 140  
 Ile Pro Phe Tyr Leu Phe Tyr Glu Gly Gln Ser Phe Cys Leu Lys His  
 145 150 155 160  
 Leu Ile Gly Ser Val Gly Thr Ala Leu Ile Phe Gly Phe Val Met Leu  
 165 170 175  
 Phe Ser Val Leu Tyr Leu Cys Gly Arg His Cys Phe Ile Lys Lys Lys  
 180 185 190  
 Xaa Leu Ser Arg Arg Gly Gln Lys Gly Phe Leu Leu Phe Phe Pro Asn  
 195 200 205  
 Leu Phe Gln Lys Phe Lys Lys Ile Asn Lys  
 210 215

&lt;210&gt;948

&lt;211&gt;162

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;948

Lys Thr Ser Asn Asn Thr Gln Lys Asn Leu Leu Leu Ile Lys Ser Ala  
 1 5 10 15  
 Glu Ser Ser Ser Leu Gln Leu Ser Leu Ala Ser Ser Ala Ile Ser Ser  
 20 25 30  
 Arg Val Glu Gln Leu Ser Ser Leu Val Leu Gly Met Glu Asn Ser Asp  
 35 40 45  
 Phe Ser Ser Leu Arg Asp Val Pro Ile Phe Ser Ala Ile Tyr Glu Ser  
 50 55 60  
 Ser Thr His Thr Pro Val Pro Thr Pro Leu Val Gly Val Gly Tyr Ile  
 65 70 75 80  
 Asn Gly Ser Gln Ser Gly Tyr Tyr Asp Thr Gln Arg Glu Ser Leu His  
 85 90 95  
 Leu Ser Gln Leu Leu Gly Ser Arg Arg Val Glu Val Val Tyr Asn Gln  
 100 105 110  
 Gly Asn Phe Met Glu Ala Ser Leu Leu Asn Leu Cys Pro Arg Arg Pro  
 115 120 125  
 Arg Arg Asp Pro Ser Pro Ile Ser Leu Ala Leu Leu Glu Leu Trp Glu  
 130 135 140  
 Ala Phe Phe Leu Glu His Pro Pro Gly Ser Thr Phe Asn Pro Ile Phe  
 145 150 155 160  
 Phe Trp

&lt;210&gt;949

&lt;211&gt;127

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;949

Thr Arg Ser Lys Lys Ser Gln Ser Cys Leu Lys Ser Met Ala Gly Phe

1 5 10 15  
 Arg Leu Gln Ser Leu Gln Ile Leu Tyr Arg Arg Ile Gly Ser Leu Tyr  
 20 25 30  
 Leu Gln Lys His Asp Asn Lys Arg Ser Glu Asp Val Leu Asp Ile Glu  
 35 40 45  
 Lys Asp Arg Tyr Gln Arg Ala Leu Tyr Ser Val His Ala Glu Leu Gly  
 50 55 60  
 Gly Glu Leu Arg Glu His Arg Lys Leu Arg Tyr Gln Lys Asn Ile Gly  
 65 70 75 80  
 Leu Lys Val Leu Pro Gly Gly Cys Ser Lys Lys Asn Ala Ser Gln Ser  
 85 90 95  
 Ser Asn Arg Ala Lys Glu Ile Gly Glu Gly Ser Leu Arg Gly Leu Leu  
 100 105 110  
 Gly His Arg Phe Ser Lys Glu Ala Ser Met Lys Phe Pro Trp Leu  
 115 120 125  
 <210>950  
 <211>412  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>950  
 Asn Thr Pro Gln Val Ala Leu Leu Ile Gln Tyr Phe Phe Gly Asn Gly  
 1 5 10 15  
 Ala Phe Tyr Val Arg Glu Ala Leu Arg Leu Thr Pro His Ala Gln Asn  
 20 25 30  
 Ile Val Leu Val Gly Ile Cys Pro Ser Leu Tyr Pro Glu His Pro Arg  
 35 40 45  
 Ser Phe Tyr Tyr Arg Val Ser Gly Asp Ile Gly Ser Arg Phe Asp Asp  
 50 55 60  
 Arg Gly Phe Val Asn Ser Gly Val Glu Thr Leu Pro Tyr Ser Ser Gly  
 65 70 75 80  
 Ser Phe Gly Ile Phe Trp Ile Ser Phe Thr Asp Pro Thr Phe Asn Phe  
 85 90 95  
 Ala Ile Val Asn Thr Phe Met Arg Thr Ala Gly Ile Asn Glu Val Ser  
 100 105 110  
 Arg Pro Met Thr Gln Asp Thr Glu Thr Ser Leu Ile Glu Met Arg Asp  
 115 120 125  
 Leu Ser Glu Gln Gln Glu Ala Asn Asn Thr Asp Ser Leu Glu Gln Glu  
 130 135 140  
 Glu Ser Leu Met Gly Ile Val Gly His Thr Val Gly Gly Val Ser Met  
 145 150 155 160  
 Thr Val Thr Ser Ser Pro Asn Ile Phe Tyr Arg Ile Gln Thr Leu Leu  
 165 170 175  
 Gly Leu Pro Glu Thr Leu Ala Glu Ala Glu Glu Asn Pro Thr Phe Pro  
 180 185 190  
 Asn Ser Thr Ile Asp Ser Leu Ala Glu Ile Met Met Asn Leu Val Arg  
 195 200 205  
 Ile Ser Asp Ala Val Ser Ile Phe Trp Ile Phe Pro Ile Val Asp Thr  
 210 215 220  
 Thr Tyr Asn Gly Val Leu Leu Ala Val Cys Ile Gly Phe Phe Gly Ile  
 225 230 235 240  
 Asn Gly Ile Cys Ser Thr Phe Leu Met Leu Thr Asn Pro Arg Ser Arg  
 245 250 255  
 Arg Asp Arg Trp Arg Asn Leu Arg Ile Met Val Leu Cys Tyr Arg Ser  
 260 265 270  
 Leu Gly Ser Gly Met Asn Leu Phe Asp Leu Ser Asn Asn Val Arg Met  
 275 280 285  
 Ala Ala Arg Arg His Val Thr Ser Cys Thr Val Ala Leu Tyr Ala Met  
 290 295 300  
 Val Thr Leu Phe Gly Trp Thr Val Ala Ile Gln Asp Ala Leu Gln Tyr  
 305 310 315 320  
 Gly Phe Pro Ser Val Arg Asp Ala Phe Tyr Arg Tyr Cys Leu Arg His  
 325 330 335  
 Arg Tyr Cys Leu Thr Gln Arg Asn Glu Asp Ser Leu Gln Thr Thr Gly  
 340 345 350

Thr Arg Phe Gln Val Thr Arg Thr His Leu Glu Asp Gln Gln Met Val  
 355 360 365  
 Ala Ser Ile Leu Asn Leu Ser Val Phe Gly Leu Phe Phe Gly Phe Val  
 370 375 380  
 Gly Leu Met Thr Thr Phe Gly Gly Leu Glu Ile Ser Pro Ser Cys Arg  
 385 390 395 400  
 Trp Asp Ala Ala Asn Asn Arg Thr Val Gly Ile Phe  
 405 410

&lt;210&gt;951

&lt;211&gt;117

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;951

Lys Ile Phe Gly Leu Glu Val Thr Val Met Glu Thr Pro Pro Thr Val  
 1 5 10 15  
 Cys Pro Thr Ile Pro Ile Lys Leu Ser Ser Cys Ser Lys Glu Ser Val  
 20 25 30  
 Leu Phe Ala Ser Cys Cys Ser Leu Arg Ser Leu Ile Ser Ile Asn Glu  
 35 40 45  
 Val Ser Val Ser Cys Val Met Gly Leu Glu Thr Ser Leu Ile Pro Ala  
 50 55 60  
 Val Arg Ile Lys Val Phe Thr Ile Ala Lys Leu Asn Val Gly Ser Val  
 65 70 75 80  
 Asn Glu Ile Gln Lys Ile Pro Lys Leu Pro Glu Glu Tyr Gly Arg Val  
 85 90 95  
 Ser Thr Pro Glu Phe Thr Asn Pro Leu Ser Ser Asn Arg Glu Pro Ile  
 100 105 110  
 Ser Pro Glu Thr Arg  
 115

&lt;210&gt;952

&lt;211&gt;431

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;952

Met Thr Trp Leu Ser Gly Leu Tyr Phe Ile Cys Ile Ala Ser Leu Ile  
 1 5 10 15  
 Phe Cys Ala Ile Gly Val Ile Leu Ala Gly Val Ile Leu Leu Ser Arg  
 20 25 30  
 Lys Leu Phe Ile Lys Val His Pro Cys Lys Leu Lys Ile Asn Asp Asn  
 35 40 45  
 Glu Glu Leu Thr Lys Thr Val Glu Ser Gly Gln Thr Leu Leu Val Ser  
 50 55 60  
 Leu Leu Ser Ser Gly Ile Pro Ile Pro Ser Pro Cys Gly Gly Lys Ala  
 65 70 75 80  
 Thr Cys Lys Gln Cys Lys Val Arg Val Val Lys Asn Ala Asp Glu Pro  
 85 90 95  
 Leu Glu Thr Asp Arg Ser Thr Phe Ser Lys Arg Gln Leu Glu Glu Gly  
 100 105 110  
 Trp Arg Leu Ser Cys Gln Cys Lys Val Gln His Asp Met Ser Leu Glu  
 115 120 125  
 Ile Glu Glu Arg Tyr Leu Asn Ala Ser Ser Trp Glu Gly Thr Val Ile  
 130 135 140  
 Ser Asn Asp Asn Val Ala Thr Phe Ile Lys Glu Leu Val Val Ala Val  
 145 150 155 160  
 Asp Pro Asn Lys Pro Ile Pro Phe Lys Pro Gly Gly Tyr Leu Gln Ile  
 165 170 175  
 Thr Val Pro Ser Tyr Lys Thr Asn Ser Ser Asp Trp Lys Gln Thr Met  
 180 185 190  
 Ala Pro Glu Tyr Tyr Ser Asp Trp Glu His Phe His Leu Phe Asp Gln  
 195 200 205  
 Val Ile Asp Asn Ser Gln Leu Pro Ala Asp Ser Ala Asn Lys Ala Tyr  
 210 215 220  
 Ser Leu Ala Ser Tyr Pro Ala Glu Leu Pro Thr Ile Lys Phe Asn Ile  
 225 230 235 240

Arg Ile Ala Thr Pro Phe Ile Asn Gly Lys Pro Asn Ser Glu Ile  
 245 250 255  
 Pro Trp Gly Val Cys Ser Ser Tyr Val Phe Ser Leu Lys Pro Gly Asp  
 260 265 270  
 Lys Ile Thr Val Ser Gly Pro Tyr Gly Glu Ser Phe Met Lys Asp Asp  
 275 280 285  
 Asp Arg Pro Leu Ile Phe Leu Ile Gly Gly Ala Gly Ser Ser Phe Gly  
 290 295 300  
 Arg Ser His Ile Leu Asp Leu Leu Leu Asn Lys His Ser Lys Arg Glu  
 305 310 315 320  
 Ile Asp Leu Trp Tyr Gly Ala Arg Ser Leu Lys Glu Asn Ile Tyr Gln  
 325 330 335  
 Glu Glu Tyr Glu Asn Leu Glu Arg Gln Phe Pro Asn Phe His Tyr His  
 340 345 350  
 Leu Val Leu Ser Glu Pro Leu Pro Glu Asp Ile Ala Ala Gly Trp Asp  
 355 360 365  
 Lys Asp Asp Pro Thr Lys Thr Asn Phe Leu Phe Arg Ala Phe Asn Leu  
 370 375 380  
 Gly Gln Leu Ser Arg Leu Asp Asn Pro Glu Asp Tyr Leu Tyr Tyr Val  
 385 390 395 400  
 Cys Gly Pro Pro Leu His Asn Ser Ser Ile Leu Lys Leu Leu Gly Asp  
 405 410 415  
 Tyr Gly Val Glu Arg Ser Ser Ile Ile Leu Asp Asp Phe Gly Ser  
 420 425 430

&lt;210&gt;953

&lt;211&gt;106

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;953

Leu Leu Ser Ser Leu Pro Leu Phe Ala Glu Glu Glu Ala Ala Gln Ser  
 1 5 10 15  
 Lys Asn Thr Phe Val Gln Pro Ala Val Met Leu Ala Ile Ala Ile Leu  
 20 25 30  
 Phe Phe Tyr Phe Ile Leu Trp Arg Pro Glu Gln Lys Arg Arg Lys Ala  
 35 40 45  
 Met Glu Lys Arg Lys Asn Asp Leu Ala Lys Gly Asp Lys Val Thr Ala  
 50 55 60  
 Met Gly Ile Ile Gly Thr Val Asp Asp Ile Arg Glu His Thr Val Ile  
 65 70 75 80  
 Leu Asn Ile Ala Ser Gly Lys Val Glu Val Leu Lys Gly Ala Ile Ser  
 85 90 95  
 Glu Ile Leu Lys Pro Asn Asp Asn Lys Ser  
 100 105

&lt;210&gt;954

&lt;211&gt;401

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;954

Met Ser Thr Met Gln Asn Cys Pro His Phe Gly Val Cys Gly Gly Cys  
 1 5 10 15  
 Ser Phe Pro Gln Ser Asn Tyr Ser Asp Ser Leu Lys Lys Lys Glu Glu  
 20 25 30  
 Leu Leu His Gln Leu Phe Ala Pro Leu Val Pro Ser Asp Met Ile Ala  
 35 40 45  
 Pro Ile Ile Pro Cys Ser Pro Ser Leu Arg Gly Arg Asn Lys Met Glu  
 50 55 60  
 Phe Ser Phe Phe Gln Thr Tyr Glu Gly Glu Lys Ser Leu Gly Phe Ile  
 65 70 75 80  
 Ser Ser Thr Lys Pro Lys Lys Gly Ile Pro Val Thr Thr Cys Leu Leu  
 85 90 95  
 Ile His Glu Gln Thr Met Asp Ile Leu Lys Leu Thr Arg Glu Trp Trp  
 100 105 110  
 Asp Lys His Pro Glu Leu Met Ala Tyr Phe Pro Pro Lys Asn Lys Gly  
 115 120 125

Ser Leu Cys Thr Leu Thr Val Arg Thr Gly Ser Pro Gln Gln Asn Phe  
 130 135 140  
 Met Val Ile Leu Thr Thr Ser Gly Thr Pro Glu Tyr Arg Val Asn Glu  
 145 150 155  
 Ala Cys Ile Asp Glu Trp Lys Glu Ile Leu Leu Ser Ser Ser Leu Asn  
 165 170 175  
 Ile Ala Ser Ile Tyr Trp Glu Glu Lys Val Ala Ala Arg Gly Ile Ser  
 180 185 190  
 Thr Tyr Tyr Glu Thr Lys Leu Leu Tyr Gly Ala Pro Ser Ile Gln Gln  
 195 200 205  
 Lys Leu Ser Leu Pro Ser Asp Gly Asn Ser Ala Ser Phe Ser Leu Arg  
 210 215 220  
 Pro Arg Ser Phe Phe Gln Pro Gln Ile Thr Gln Ala Ala Lys Ile Ile  
 225 230 235 240  
 Glu Thr Ala Lys Glu Phe Ile Asn Pro Glu Gly Ser Glu Thr Leu Leu  
 245 250 255  
 Asp Leu Tyr Cys Gly Ala Gly Thr Ile Gly Ile Met Leu Ser Pro Tyr  
 260 265 270  
 Val Lys Asn Val Ile Gly Val Glu Ile Ile Pro Asp Ala Val Ala Ser  
 275 280 285  
 Ala Gln Glu Asn Ile Lys Ala Asn Asn Lys Glu Asp Cys Val Glu Val  
 290 295 300  
 Tyr Leu Glu Asp Ala Lys Ala Phe Cys Lys Arg Asn Glu Asn Cys Lys  
 305 310 315 320  
 Ala Pro Asp Val Ile Ile Ile Asp Pro Pro Arg Cys Gly Met Gln Ser  
 325 330 335  
 Lys Val Leu Lys Tyr Ile Leu Arg Ile Gly Ser Pro Lys Ile Val Tyr  
 340 345 350  
 Ile Ser Cys Asn Pro Lys Thr Gln Phe Gln Glu Cys Ala Asp Leu Ile  
 355 360 365  
 Ser Gly Gly Tyr Arg Ile Lys Lys Met Gln Pro Ile Asp Gln Phe Pro  
 370 375 380  
 Tyr Ser Thr His Leu Glu Asn Ile Ile Leu Leu Glu Arg Glu Ile Asp  
 385 390 395 400  
 Leu

&lt;210&gt;955

&lt;211&gt;123

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;955

Met Ala Leu Lys Asp Thr Ala Lys Lys Met Lys Asp Leu Leu Asp Ser  
 1 5 10 15  
 Ile Gln His Asp Leu Ala Lys Ala Glu Lys Gly Asn Lys Ala Ala Ala  
 20 25 30  
 Gln Arg Val Arg Thr Asp Ser Ile Lys Leu Glu Lys Val Ala Lys Leu  
 35 40 45  
 Tyr Arg Lys Glu Ser Ile Lys Ala Glu Lys Ser Gly Leu Leu Lys Arg  
 50 55 60  
 Lys Pro Ser Thr Lys Ala Pro Ala Lys Val Lys Lys Thr Ala Glu Lys  
 65 70 75 80  
 Lys Ala Pro Lys Lys Ser Ser Ala Ala Ala Lys Thr Ser Lys Ala  
 85 90 95  
 Val Lys Ala Ser Lys Pro Ala Ser Lys Lys Thr Ala Ala Lys Lys Val  
 100 105 110  
 Lys Lys Pro Ser Lys Ala Arg Gly Phe Arg Lys  
 115 120

&lt;210&gt;956

&lt;211&gt;822

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;956

Met Lys Lys Leu Tyr His Pro Thr Leu Phe Leu Arg Pro Leu Ile Arg  
 1 5 10 15

Leu Ser Leu Ile Phe Ala Leu Ser Leu Thr Leu Ile Ser Gly Asn Phe  
 20 25 30  
 Pro Gln Gln Lys Ser Phe Gly His Cys Cys Ala Asp Met His Ser Ala  
 35 40 45  
 Leu Ile Ser Gly Lys Asn Cys Glu Glu Leu Phe Ala Asp Phe Ile Glu  
 50 55 60  
 Arg Val Leu Ala Asp Arg Glu Thr Leu Thr Ala Arg Asp Trp Gly Thr  
 65 70 75 80  
 Val Val Val Leu Val Arg Glu Tyr Leu Leu Lys Cys Ile Arg Lys Gly  
 85 90 95  
 Asp Cys Asp Tyr Gly Val Lys Ile Leu Gln Lys Leu Leu Ala Leu Arg  
 100 105 110  
 Leu Pro Lys Asp Ala Arg Lys Asp Leu Gln Ile Leu Trp His Arg Leu  
 115 120 125  
 Asn Pro Glu Gln Ala Pro Leu Arg Asp Val Val Asp Gln Leu Phe Thr  
 130 135 140  
 Ile Gly Cys His Glu Ser Leu Gln Asp His Leu Leu Phe Glu Leu Tyr  
 145 150 155 160  
 Thr Val Thr Leu His Ser Gly Tyr Glu Asn Arg Lys Gln Asp Met Leu  
 165 170 175  
 Leu Ala Lys Glu Gln Gly Asp Tyr Lys Lys Ala Ile Glu Leu Ala Lys  
 180 185 190  
 Glu Leu Val Ala Ala Leu Glu Lys Gly Ser Cys Ser Pro His Pro Glu  
 195 200 205  
 Ile Val Gln Ile Glu Lys Thr Phe Leu Gln Lys Thr Leu Leu Ala Leu  
 210 215 220  
 Gln Ile Lys Val Ala Gln Glu Ala Gln Glu Ser Cys Asp Ala Leu Leu  
 225 230 235 240  
 Thr Pro Tyr Cys Leu Ser Glu Ile Ala Tyr Thr Glu Ala Met Asp Ala  
 245 250 255  
 Leu Val Leu Arg Ile Ala Arg Gly Glu Val Ser Arg Thr Asn Glu Val  
 260 265 270  
 Asp Ser Val Leu Leu Ser His Ala Leu Gln His Leu Pro Phe Ala Arg  
 275 280 285  
 Glu Lys Ala Ile Pro Glu Leu Glu Val Leu Ile Asp His Gly Ala Tyr  
 290 295 300  
 Leu Glu Ser Thr Leu Leu Tyr Tyr Ala Tyr Phe Ser Leu Leu Glu Leu  
 305 310 315 320  
 Tyr His Gln Asn Lys Asp Phe Ala Ser Leu Glu Arg Leu Leu Glu Lys  
 325 330 335  
 Gly Asp Ala Val Phe Val Pro Glu His Pro Tyr Phe Pro Glu Tyr Gly  
 340 345 350  
 Phe Phe Leu Gly Ala Tyr Phe Tyr Ala Lys Gly Lys Tyr Glu Ser Ala  
 355 360 365  
 Glu Lys Val Phe Leu Gln Ile Ile Asp Pro Ala Val Lys Leu Gly Ala  
 370 375 380  
 Thr Phe Ala Arg Ala Tyr Glu Tyr Leu Gly Cys Ile Ala Tyr Val Gln  
 385 390 395 400  
 Asn His Tyr Glu Lys Ala Glu Glu Tyr Phe Leu Arg Ala Tyr Lys Ser  
 405 410 415  
 Trp Gly Arg Glu Glu Ser Gly Ile Gly Leu Phe Leu Ala Tyr Ala Val  
 420 425 430  
 Gln Lys Lys Lys Thr Ala Cys Glu Asp Met Leu Tyr His Pro Lys Phe  
 435 440 445  
 Ser Phe Thr Tyr Arg His Leu Leu Asp Ser Leu Cys Ser Leu Ser Tyr  
 450 455 460  
 Pro His Gly Glu Asn Lys Gly Ser Ser Ala Ile Gln Arg Val His Arg  
 465 470 475 480  
 Ala Val Pro Glu Leu Ser Glu Ile Tyr Ser Arg Cys Ile Tyr Asp Met  
 485 490 495  
 Ile Lys Tyr Arg Asn Val Thr Tyr Thr His Pro Ile Ile Glu Leu Ala  
 500 505 510  
 Tyr Asn Gln Val Arg Asn Leu Glu Lys Arg Asn Leu Glu Glu Ile Cys  
 515 520 525

Arg Asp Ala Gln Asp Pro Glu Tyr Asp Lys Ala Leu Ala Phe Trp Gly  
 530 535 540  
 Ala Leu Gln Ser Gly Ala Ser Val Pro Arg Ser Leu Ile Glu Ser Ser  
 545 550 555 560  
 Asp Val Asp Glu Ala Gly Ile Thr Ile Arg Cys Tyr Glu Ala Leu Tyr  
 565 570 575  
 Phe His Asn Pro Asp Ala Ile Ala Met Leu Pro Gln Ala Phe Ser Glu  
 580 585 590  
 Glu Cys Asn Ser Trp Gln Thr Ala Leu Arg Leu Val Trp Thr Leu Val  
 595 600 605  
 Arg Pro Lys Gly Ala Pro Asn His Ala Lys Tyr Trp Asp His Leu Val  
 610 615 620  
 Leu Arg Pro His Gly Asp Ser Leu Tyr Phe Phe Gly Tyr Asp Leu Gln  
 625 630 635 640  
 Glu Tyr Leu Ile Gly Lys Glu Asp Ala Leu Lys His Leu Ser Val Phe  
 645 650 655  
 Ala Glu Leu Phe Pro Lys Ser Ser Leu Leu Ser Leu Val Tyr Tyr Leu  
 660 665 670  
 Gln Gly Tyr Ser Glu Ser Ser Ala Leu Arg Lys Val Gly Trp Phe Val  
 675 680 685  
 Lys Ala Leu Glu Glu Phe Thr Glu Ile Ser Trp Ser Gly Glu His Met  
 690 695 700  
 Lys Thr Trp Ala Tyr Ile Tyr Tyr Met Val Lys Leu Asp Leu Ala Asp  
 705 710 715 720  
 Thr Tyr Ile Ser Leu Gly Asn Phe Ser Gln Ala Val His Ile Leu Glu  
 725 730 735  
 Glu Val Lys Glu Asp Trp Gln Val Ala Ser His Pro Lys Leu His Phe  
 740 745 750  
 Leu Lys Gly Glu Asp Cys Tyr Leu Ala Met Glu Leu Arg Trp Val Glu  
 755 760 765  
 Gly Leu Ala Tyr Ala Tyr Phe Gln Leu His Glu Thr Ala His Leu Ser  
 770 775 780  
 Asn His Leu Leu Glu His Val Glu Lys Asn Leu Ile Ser Pro Arg Ser  
 785 790 795 800  
 Tyr Arg Asp Tyr Tyr Gly Glu Ser Leu Gln Arg Thr Leu Gly Leu Cys  
 805 810 815  
 Gln Arg Phe Leu Gly Val  
 820

&lt;210&gt;957

&lt;211&gt;150

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae.

&lt;400&gt;957

His Gln Leu Arg Leu Ala Ser Arg Gln Leu Phe Ala Ser Gln Arg Leu  
 1 5 10 15  
 Trp His Ala Ile Cys Arg Arg Ala Ser Pro Leu Gly Asn Arg Leu Glu  
 20 25 30  
 Phe Ser Asn Leu Pro Ala Ser Thr Pro Gly Lys Thr Val Leu Ser Leu  
 35 40 45  
 Leu Ile Glu Gly Lys Trp Arg Glu Ser Glu Ala His Ala Phe Ala Ile  
 50 55 60  
 Ala Ala Leu Ser Glu Tyr Leu Asn Ile Asn Gln Lys Pro Asp Ala Phe  
 65 70 75 80  
 Ala Leu Phe Ser Ser Gln Asp Gly Met Pro Gln His Ala Val Gly Phe  
 85 90 95  
 Leu Glu Arg Lys Glu Arg Ile Leu Pro His Leu Pro Gly Asn Leu Lys  
 100 105 110  
 Ile Val Gly Gln Asn Ile Ala Gly Pro Gly Leu Asn Arg Cys Ile Ala  
 115 120 125  
 Ser Ala Tyr His Ala Ile Cys Asp Leu His Thr Glu Glu Thr Leu Ala  
 130 135 140  
 Gln Pro Gln Ser Ser Leu  
 145 150  
 <210>958



WO 99/27105

&lt;211&gt;354

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;958

Ala Glu Arg Arg Phe Cys Val Lys Arg Ala Ile Ile Ile Gly Ala Gly  
 1 5 10 15  
 Ile Ser Gly Leu Ala Ala Gly Trp Trp Leu His Lys Lys Phe Pro Gln  
 20 25 30  
 Ala Glu Ile Leu Val Leu Asp Lys Glu Ala Tyr Ala Gly Gly Phe Val  
 35 40 45  
 Arg Thr Glu Ser Pro Gln Gly Phe Ser Phe Asp Leu Gly Pro Lys Gly  
 50 55 60  
 Phe Leu Thr Arg Gly Asp Gly Glu Tyr Thr Leu Lys Leu Ile His Glu  
 65 70 75 80  
 Leu Gly Leu Gln Asn Ser Leu Ile Phe Ser Asp Arg Ala Ala Lys Asn  
 85 90 95  
 Arg Phe Val Tyr Tyr Arg Gly Lys Ala Arg Lys Ile Ser Thr Trp Thr  
 100 105 110  
 Leu Leu Arg Lys Gly Leu Leu Pro Ser Leu Ile Lys Asp Phe Arg Ala  
 115 120 125  
 Pro Cys Tyr Thr Gln Asp Ser Ser Val Gln Asp Phe Leu Lys Arg His  
 130 135 140  
 Ser Ser Gln Asn Phe Thr Ser Tyr Ile Leu Asp Pro Leu Ile Thr Ala  
 145 150 155 160  
 Ile Arg Ala Gly His Ser Ser Ile Leu Ser Thr His Met Ala Phe Pro  
 165 170 175  
 Glu Leu Ala Lys Arg Glu Ala Ser Ser Gly Ser Leu Leu Arg Ser Tyr  
 180 185 190  
 Leu Lys Asn Arg Ser Pro Lys Lys Ser Lys Thr Asp Arg Tyr Leu Ala  
 195 200 205  
 Ser Leu Ser Pro Ser Met Gly Thr Leu Ile Thr Thr Ile Gln Glu Lys  
 210 215 220  
 Leu Pro Ala Thr Trp Lys Phe Ser Thr Ser Val Thr His Ile Asp Cys  
 225 230 235 240  
 Ser Pro Lys Glu Ala Cys Val Thr Thr Pro Ser Glu Thr Phe Phe Ala  
 245 250 255  
 Asp Met Val Ile Tyr Thr Gly Pro Leu Gln Gln Leu Pro Val Leu Leu  
 260 265 270  
 Pro Asn Tyr Gly Ile Glu Asn Leu Ser Lys Arg Val Leu Pro Trp Asn  
 275 280 285  
 Leu Ser Ser Ile Ser Leu Gly Trp His His Ala Asn Phe Ser Leu Pro  
 290 295 300  
 Lys Gly Tyr Gly Met Leu Phe Ala Asp Glu Leu Pro Leu Leu Gly Ile  
 305 310 315 320  
 Val Trp Asn Ser Gln Ile Phe Pro Gln Val Arg Gln Gly Lys Gln Cys  
 325 330 335  
 Ser Pro Phe Ser Leu Lys Ala Asn Gly Gly Asn Gln Lys Leu Met Pro  
 340 345 350  
 Leu Arg

&lt;210&gt;959

&lt;211&gt;460

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;959

Phe Leu Met Phe Asn Val Asn Phe Lys Phe Leu Glu Gly Leu His Gln  
 1 5 10 15  
 Pro Ala Pro Arg Tyr Thr Ser Tyr Pro Thr Ala Leu Glu Trp Glu Pro  
 20 25 30  
 Ser Asp Ala Ala Pro Ala Leu Leu Ala Phe Gln Arg Xaa Arg Xaa Asn  
 35 40 45  
 Xaa Gln Pro Leu Ser Leu Tyr Phe His Ile Pro Phe Cys Gln Ser Met  
 50 55 60  
 Cys Leu Tyr Cys Gly Cys Ser Val Val Leu Asn Arg Arg Glu Asp Ile

|   |     |     |     |
|---|-----|-----|-----|
| 65  | 70  | 75  | 80  |
| Val Glu Ala Tyr Ile Asn Thr Leu Ile Gln Glu Met Lys Leu Val Val |     |     |     |
|   | 85  | 90  | 95  |
| Glu Thr Ile Gly Phe Arg Pro Gln Val Ser Arg Ile His Phe Gly Gly |     |     |     |
|   | 100 | 105 | 110 |
| Gly Thr Pro Ser Arg Leu Ser Arg Glu Leu Phe Thr Leu Leu Phe Asp |     |     |     |
|   | 115 | 120 | 125 |
| His Ile His Lys Leu Phe Asp Leu Ser His Ala Glu Glu Ile Ala Ile |     |     |     |
|   | 130 | 135 | 140 |
| Glu Val Asp Pro Arg Ser Leu Arg Asn Asp Met Glu Lys Ala Asp Phe |     |     |     |
|   | 145 | 150 | 155 |
| Phe Gln Asn Val Gly Phe Asn Arg Val Ser Leu Gly Val Gln Asp Thr |     |     |     |
|   | 165 | 170 | 175 |
| Gln Ala Asp Val Gln Glu Ala Val Arg Arg Arg Gln Ser His Glu Glu |     |     |     |
|   | 180 | 185 | 190 |
| Ser Leu Lys Ala Tyr Glu Lys Phe Lys Glu Leu Ala Phe Gln Ser Ile |     |     |     |
|   | 195 | 200 | 205 |
| Asn Ile Asp Leu Ile Tyr Gly Leu Pro Lys Gln Thr Lys Glu Ser Phe |     |     |     |
|   | 210 | 215 | 220 |
| Ser Lys Thr Ile Gln Asp Ile Leu Ala Met Tyr Pro Asp Arg Leu Ala |     |     |     |
|   | 225 | 230 | 235 |
| Leu Phe Ser Phe Ala Ser Val Pro Trp Ile Lys Pro His Gln Lys Ala |     |     |     |
|   | 245 | 250 | 255 |
| Met Lys Ala Ser Asp Met Pro Ser Met Glu Glu Lys Phe Ala Ile Tyr |     |     |     |
|   | 260 | 265 | 270 |
| Ser Gln Ser Arg His Leu Leu Thr Lys Ala Gly Tyr Gln Ala Ile Gly |     |     |     |
|   | 275 | 280 | 285 |
| Met Asp His Phe Ser Leu Pro His Asp Pro Leu Thr Leu Ala Phe Lys |     |     |     |
|   | 290 | 295 | 300 |
| Asn Lys Thr Leu Ile Arg Asn Phe Gln Gly Tyr Ser Leu Pro Pro Glu |     |     |     |
|   | 305 | 310 | 315 |
| Glu Asp Leu Leu Gly Leu Gly Met Thr Ser Thr Ser Phe Ile Arg Gly |     |     |     |
|   | 325 | 330 | 335 |
| Ile Tyr Leu Gln Asn Ala Lys Thr Leu Glu Glu Tyr His Asn Thr Val |     |     |     |
|   | 340 | 345 | 350 |
| Leu Arg Gly Thr Phe Ala Thr Val Lys Ser Lys Ile Leu Thr Glu Asp |     |     |     |
|   | 355 | 360 | 365 |
| Asp Arg Ile Arg Lys Trp Ala Ile His Lys Leu Met Cys Thr Phe Thr |     |     |     |
|   | 370 | 375 | 380 |
| Ile Asn Lys Glu Glu Phe Phe Asn Leu Phe Gly Tyr Glu Phe Asp Thr |     |     |     |
|   | 385 | 390 | 395 |
| Tyr Phe Ile Glu Ser Arg Asp Arg Leu Ile Ser Met Glu Thr Thr Gly |     |     |     |
|   | 405 | 410 | 415 |
| Leu Ile His Asn Ser Pro Gly Ser Leu Lys Val Thr Pro Leu Gly Glu |     |     |     |
|   | 420 | 425 | 430 |
| Leu Phe Val Arg Val Ile Ala Thr Ala Phe Asp His Tyr Phe Leu Asn |     |     |     |
|   | 435 | 440 | 445 |
| Lys Val Ser Lys Lys Glu Cys Phe Ser Ala Ser Ile                 |     |     |     |
|   | 450 | 455 | 460 |
| <210>960  |     |     |     |
| <211>261  |     |     |     |
| <212>PRT  |     |     |     |
| <213>Chlamydia pneumoniae                                       |     |     |     |
| <400>960  |     |     |     |
| Ser Tyr Cys Arg Ala Thr Leu Leu Gly Pro Ser Leu Leu His Val Asp |     |     |     |
|   | 1   | 5   | 10  |
| Ala Ala Ile Leu Phe Ala Asp Ile Leu Ser Ile Leu Asp Gly Phe Ala |     |     |     |
|   | 20  | 25  | 30  |
| Val Thr Tyr Asp Phe Ala Pro Gly Pro Arg Ile Gln Phe Ser Pro Glu |     |     |     |
|   | 35  | 40  | 45  |
| Gln Pro Phe Thr Phe Thr Ser Asp Pro Gln Thr Ile Phe Ser Tyr Leu |     |     |     |
|   | 50  | 55  | 60  |
| Leu Asp Ala Il Arg Thr Leu Lys Gln Lys Leu Pro Val Pro Leu Ile  |     |     |     |
|   | 65  | 70  | 75  |
|   |     |     | 80  |

Val Phe Ala Ala Ser Pro Phe Thr Leu Ala Cys Tyr Leu Ile Asp Gly  
 85 90 95  
 Gly Ala Ser Lys Asp Phe Ser Lys Thr Met Ser Phe Leu Tyr Val Tyr  
 100 105 110  
 Pro Glu Lys Phe Asp Gln Leu Ile Ser Thr Ile Ile Glu Gly Thr Ala  
 115 120 125  
 Ile Tyr Leu Lys Thr Gln Met Asp Ala Gly Ala Ala Val Gln Leu  
 130 135 140  
 Phe Glu Ser Ser Ser Leu Arg Leu Pro Ser Ala Leu Phe Thr Arg Tyr  
 145 150 155 160  
 Val Thr Glu Pro Asn Arg Arg Leu Ile Ala Lys Leu Lys Glu Gln Ala  
 165 170 175  
 Ile Pro Val Ser Leu Phe Cys Arg Cys Phe Glu Glu Asn Phe Tyr Thr  
 180 185 190  
 Leu Gln Ala Thr Gln Ala Asp Thr Leu His Pro Asp Tyr His Val Asp  
 195 200 205  
 Leu His Arg Ile Gln Lys Asn Leu Met Leu Ser Leu Gln Gly Asn Leu  
 210 215 220  
 Asp Pro Ala Ile Phe Leu Leu Pro Gln Glu Lys Leu Leu His Tyr Val  
 225 230 235 240  
 Glu Ala Phe Leu Val Pro Leu Arg Thr Tyr Pro Asn Phe Ile Phe Asn  
 245 250 255  
 Ser Gly His Gly Ile Leu Pro Glu Thr Pro Leu Glu Asn Val Gln Leu  
 260 265 270  
 Val Val Ser Tyr Val Gln Arg Gln Leu  
 275 280

&lt;210&gt;961

&lt;211&gt;1085

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;961

Met Ala Met Asp Phe Asn Pro Val Asn Leu Asp Phe Ser Ile Ser Lys  
 1 5 10 15  
 Glu Phe Lys Glu Glu Thr Leu Pro Leu Leu Leu Glu Asn Ile His Pro  
 20 25 30  
 Gly Ala Thr Ala Phe Leu Ala Ala Lys Met Phe His Asp Cys Arg Ala  
 35 40 45  
 Ser Val Ile Met Ile Thr Thr Pro Ala Arg Leu Asp Asp Leu Phe Glu  
 50 55 60  
 Asn Leu Arg Thr Phe Leu Asp Gln Ala Pro Val Glu Phe Pro Ser Ser  
 65 70 75 80  
 Glu Ile Asp Leu Ser Pro Lys Leu Val Asn Ile Asp Ala Val Gly Lys  
 85 90 95  
 Arg Asp His Leu Leu Tyr Ser Leu Asn Gln His Arg Ala Pro Ile Phe  
 100 105 110  
 Cys Val Thr Thr Leu Lys Ala Leu Leu Glu Lys Thr Arg Ser Pro Gln  
 115 120 125  
 Ala Thr Ser Gln Gln His Leu Asp Leu Ala Val Gly Asp Val Leu Asp  
 130 135 140  
 Pro Glu Ala Thr Thr Glu Leu Cys Lys Ser Leu Gly Tyr Ser Gln Val  
 145 150 155 160  
 Met Leu Thr Ser Glu Lys Gly Glu Phe Ser Cys Arg Gly Gly Ile Val  
 165 170 175  
 Asp Ile Phe Pro Leu Ser Ser Pro Glu Pro Phe Arg Ile Glu Phe Trp  
 180 185 190  
 Gly Glu Lys Ile Ile Ser Ile Arg Ser Tyr Asn Pro Ser Asp Gln Leu  
 195 200 205  
 Ser Thr Gly Lys Val Ser Lys Ile Ser Ile Ser Pro Ala Tyr Thr Glu  
 210 215 220  
 Glu Ala Ser Gly Gly Asn Tyr Ser His Ser Leu Leu Asp Tyr Phe Ser  
 225 230 235 240  
 Thr Pro Pro Leu Tyr Leu Phe Asp Asn Leu Glu Ile Leu Glu Asp Asp  
 245 250 255  
 Phe Ala Asp Ile Ser Gly Thr Leu Ser Ser Leu Pro Asp Arg Phe Phe



|   |   |      |
|---|---|------|
| 770   | 775                                     | 780  |
| Leu Ala Glu Thr Ile Arg   | Asn Leu Ile Pro Glu Ala Arg Ile Gly Val |      |
| 785   | 790                                     | 795  |
| Ala His Gly Gln Met Gly Ala Glu Asp Leu Ser Asn Ile Phe Thr Lys |   | 800  |
|   | 805                                     | 810  |
| Phe Lys Asn Gln Lys Thr Asp Ile Leu Val Ala Thr Ala Leu Ile Gln |   | 815  |
|   | 820                                     | 825  |
| Asn Gly Ile Asp Ile Pro Asn Ala Asn Thr Ile Leu Ile Asp His Ala |   | 830  |
|   | 835                                     | 840  |
| Asp Lys Phe Gly Met Ala Asp Leu Tyr Gln Met Lys Gly Arg Val Gly |   | 845  |
|   | 850                                     | 855  |
| Arg Trp Asn Lys Lys Ala Tyr Cys Tyr Phe Leu Val Pro His Leu Asp |   | 860  |
|   | 865                                     | 870  |
| Arg Leu Ser Gly Pro Ala Ala Lys Arg Leu Ala Ala Leu Asn Lys Gln |   | 875  |
|   | 885                                     | 890  |
| Glu Tyr Gly Gly Gly Met Lys Ile Ala Leu His Asp Leu Glu Ile Arg |   | 895  |
|   | 900                                     | 905  |
| Gly Ala Gly Asn Ile Leu Gly Thr Asp Gln Ser Gly His Ile Gly Thr |   | 910  |
|   | 915                                     | 920  |
| Ile Gly Phe Asn Leu Tyr Cys Lys Leu Leu Lys Lys Ala Val Ser Ala |   | 925  |
|   | 930                                     | 935  |
| Leu Lys Lys His Thr Ser Pro Leu Leu Phe Asn Asp Asp Val Lys Ile |   | 940  |
|   | 945                                     | 950  |
| Glu Phe Pro Tyr Asn Ser Arg Ile Pro Asp Thr Tyr Ile Glu Thr Gly |   | 955  |
|   | 965                                     | 970  |
| Ser Met Arg Ile Glu Phe Tyr Gln Lys Ile Gly Asn Ala Glu Ser Ser |   | 975  |
|   | 980                                     | 985  |
| Glu Glu Leu Thr Ala Ile Gln Glu Glu Met Arg Asp Arg Phe Gly Pro |   | 990  |
|   | 995                                     | 1000 |
| Leu Pro Gln Glu Ile Cys Trp Leu Phe Ala Leu Ala Glu Ile Arg Leu |   | 1005 |
|   | 1010                                    | 1015 |
| Phe Ala Leu Gln His Gly Ile Ser Ser Ile Lys Gly Thr Ala Asn Ala |   | 1020 |
|   | 1025                                    | 1030 |
| Leu Tyr Val Gln Lys Cys Leu Ser Lys Ser Glu Gln Thr Lys Lys Thr |   | 1035 |
|   | 1045                                    | 1050 |
| Leu Pro Tyr Ala Leu Ser Pro Thr Pro Glu Leu Leu Val Lys Glu Val |   | 1055 |
|   | 1060                                    | 1065 |
| Ile Glu Ser Ile Glu Arg Gly Phe Leu Ile Asn Ala Ser             |   | 1070 |
|   | 1075                                    | 1080 |
|   |   | 1085 |

<210>962  
 <211>182  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>962

|   |     |
|---|-----|
| Gly Gly His Trp Arg Lys Ser Arg Ser Tyr Ser Thr Pro Thr Lys Arg |     |
| 1   | 5   |
| Ser Ile Arg Arg Asp Cys Thr Leu Leu Gln Val Pro Arg Asp Gln Ile |     |
|   | 20  |
| Val Ser Arg Leu Thr Ala Thr Leu Asp Glu Arg Lys Gln Gln Asp Lys |     |
|   | 35  |
| Arg Leu Asn Glu Leu Glu Asn Ser Leu Ile Gln Thr Lys Leu Asp Lys |     |
|   | 50  |
| Leu Ile His Asn Cys His Gln Arg Gln Gly Ile Thr Cys Leu Val His |     |
|   | 65  |
| His Leu Ala Glu His Glu Asn His Arg Leu Gln Gln Tyr Ala Gln Cys |     |
|   | 85  |
| Leu His Gln Arg Ile Pro Glu Lys Leu Ile Ser Leu Trp Thr Thr Gln |     |
|   | 100 |
| Lys Asn Gly Lys Tyr Ile Val Leu Ser Arg Val Ser Asp Asp Leu Ile |     |
|   | 115 |
| Thr Gln Gly Val His Ala Gln Asp Leu Leu Lys Ala Val Leu Thr Pro |     |
|   | 130 |
| Cys Gly Gly Arg Trp Gly Gly Lys Asp Gln Ser Ala Gln Gly Ser Ala |     |
|   | 145 |
|   | 150 |
|   | 155 |
|   | 160 |

Pro Ala Leu Pro Ala Thr Glu Val Leu Asn Glu Thr Leu Trp Gln Trp  
 165 170 175  
 Ile Ser Thr Gln Leu Ile  
 180  
 <210>963  
 <211>482  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>963  
 Ser Gly Cys Val Ala Arg Leu Ile Ala Lys Thr Glu Gln Leu Ser Gly  
 1 5 10 15  
 Lys Val Tyr His Pro Asp Asp Ser Gly Ala Ala Phe Arg Val Ile Ala  
 20 25 30  
 Asp His Val Arg Ser Leu Ser Phe Ala Ile Ala Asp Gly Leu Leu Pro  
 35 40 45  
 Gly Asn Thr Glu Arg Gly Tyr Val Leu Arg Lys Ile Leu Arg Arg Ser  
 50 55 60  
 Val Asn Tyr Gly Arg Arg Leu Gly Phe Arg Asn Pro Phe Leu Ala Glu  
 65 70 75 80  
 Ile Val Pro Ser Leu Ala Asp Ala Met Gly Glu Ala Tyr Pro Glu Leu  
 85 90 95  
 Lys Asn Ser Leu Ser Gln Ile Gln Lys Val Leu Thr Leu Glu Glu Glu  
 100 105 110  
 Ser Phe Phe Lys Thr Leu Asp Arg Gly Gly Asn Leu Leu Gln Gln Val  
 115 120 125  
 Leu Lys Ser Ser Ser Ser Ser Cys Ile Ser Gly Glu Asp Ala Phe  
 130 135 140  
 Lys Leu Lys Asp Thr Tyr Gly Met Pro Ile Asp Glu Ile Ser Leu Leu  
 145 150 155 160  
 Ala Lys Asp Tyr Asp Tyr Ser Val Asp Met Asp Thr Phe His Lys Leu  
 165 170 175  
 Glu Gln Glu Ala Lys Glu Arg Ser Arg Lys Asn Val Val Gln Ser Gln  
 180 185 190  
 Gly Thr Ser Glu Ser Ile Tyr Asn Glu Leu His Leu Thr Ser Glu Phe  
 195 200 205  
 Ile Gly Tyr Asp His Leu Ser Cys Asp Thr Phe Ile Glu Ala Ile Ile  
 210 215 220  
 Ser Lys Asp His Ile Val Ser Ser Leu Gln Glu Lys Gln Glu Gly Ala  
 225 230 235 240  
 Ile Val Leu Lys Val Ser Pro Phe Tyr Ala Glu Lys Gly Gly Gln Val  
 245 250 255  
 Gly Asp Ser Gly Glu Ile Phe Cys Ser Glu Gly Thr Phe Ile Val Thr  
 260 265 270  
 His Thr Thr Ser Pro Lys Ala Gly Leu Ile Val His His Gly Arg Ile  
 275 280 285  
 Ser Gln Gly Ser Leu Thr Val Glu Ala Ala Val Thr Ala Gln Val Asn  
 290 295 300  
 Arg Tyr Arg Arg Lys Arg Ile Ala Asn Asn His Thr Ala Cys His Leu  
 305 310 315 320  
 Leu His Lys Ala Leu Glu Ile Thr Leu Gly Asp His Ile Arg Gln Ala  
 325 330 335  
 Gly Ser Tyr Val Asp Asp Thr Lys Ile Arg Leu Asp Phe Thr His Pro  
 340 345 350  
 Gln Ala Ile Ser Pro Glu Asp Leu Leu Cys Ile Glu Thr Leu Val Asn  
 355 360 365  
 Glu Ser Ile Arg Glu Asn Glu Pro Val Asp Ile Arg Glu Ala Leu Tyr  
 370 375 380  
 Ser Asp Val Met Asn Ser Ser Glu Ile Lys Gln Phe Phe Gly Asp Lys  
 385 390 395 400  
 Tyr Ser Asp Val Val Arg Val Val Ser Ala Gly His Ser His Glu Leu  
 405 410 415  
 Cys Gly Gly Thr His Ala Glu Ala Thr Gly Asp Ile Gly Phe Phe Arg  
 420 425 430  
 Ile Thr Lys Glu His Ala Val Ala Met Gly Ile Arg Arg Ile Glu Ala

435                      440                      445  
 Val Thr Gly Glu Lys Ala Glu Ala Thr Val His Gln Gln Ser Glu Val  
 450                      455                      460  
 Leu Glu Glu Ile Val Arg Tyr Tyr Lys Ser Leu Gly Ile Arg Leu Ser  
 465                      470                      475                      480  
 Pro Gly

&lt;210&gt;964

&lt;211&gt;129

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;964

Ser Arg Arg Ile Tyr Ala Thr Val His Glu Lys Asp Asp Glu Ala Phe  
 1                      5                      10                      15  
 Ala Leu Trp Glu Ala Tyr Leu Pro Thr Asp Arg Ile Phe Arg Leu Thr  
 20                      25                      30  
 Asp Lys Asp Asn Phe Trp Ser Met Ala Asn Thr Gly Pro Cys Gly Tyr  
 35                      40                      45  
 Cys Ser Glu Leu Leu Phe Asp Arg Gly Pro Ser Phe Gly Asn Ala Ser  
 50                      55                      60  
 Ser Pro Leu Asp Asp Thr Asp Gly Glu Arg Phe Leu Glu Tyr Trp Asn  
 65                      70                      75                      80  
 Leu Val Phe Met Glu Phe Asn Arg Thr Ser Glu Gly Ser Leu Leu Ala  
 85                      90                      95  
 Leu Pro Asn Lys His Val Asp Thr Gly Ala Gly Leu Glu Arg Leu Val  
 100                      105                      110  
 Ser Leu Ile Ala Gly Thr His Thr Val Phe Glu Ala Asp Val Leu Arg  
 115                      120                      125  
 Asp

&lt;210&gt;965

&lt;211&gt;195

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;965

Met Leu Ser Asn Thr Ile Arg Ser Asn Phe Leu Lys Phe Tyr Ala Asn  
 1                      5                      10                      15  
 Arg His His Thr Ile Leu Pro Ser Ser Pro Val Phe Pro His Asn Asp  
 20                      25                      30  
 Pro Ser Ile Leu Phe Thr Asn Ala Gly Met Asn Gln Phe Lys Asp Ile  
 35                      40                      45  
 Phe Leu Asn Lys Glu Lys Val Ser Tyr Ser Arg Ala Thr Thr Ser Gln  
 50                      55                      60  
 Lys Cys Ile Arg Ala Gly Gly Lys His Asn Asp Leu Asp Asn Val Gly  
 65                      70                      75                      80  
 His Thr Ser Arg His Leu Thr Phe Phe Glu Met Leu Gly Asn Phe Ser  
 85                      90                      95  
 Phe Gly Asp Tyr Phe Lys Ala Glu Ala Ile Ala Phe Ala Trp Glu Val  
 100                      105                      110  
 Ser Leu Ser Val Phe Asn Phe Asn Pro Glu Gly Phe Thr Leu Pro Tyr  
 115                      120                      125  
 Met Lys Lys Thr Met Lys His Leu Leu Phe Gly Lys His Ile Phe Leu  
 130                      135                      140  
 Gln Ile Val Phe Ser Val Leu Gln Thr Lys Thr Thr Ser Gly Ala Trp  
 145                      150                      155                      160  
 Gln Thr Gln Ala Pro Val Ala Ile Val Pro Ser Ser Ser Leu Ile Val  
 165                      170                      175  
 Ala Pro Val Leu Glu Thr Pro Leu Leu Pro Leu Thr Ile Leu Met Glu  
 180                      185                      190  
 Ser Val Ser  
 195

&lt;210&gt;966

&lt;211&gt;692

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;966

Leu Gly Ile Ser Tyr Ser Cys Cys Phe Tyr Ile Glu Gly Leu Gln Gly  
 1 5 10 15  
 Leu Leu Met Ile Asn Lys Glu Leu Asp Ile Gly Ile Leu Gly Lys Ile  
 20 25 30  
 Ala Gly Ala Ile Lys Gln Ile Ser Ile Glu Ser Ile Gln Lys Ala Ser  
 35 40 45  
 Ser Gly His Pro Gly Leu Pro Leu Gly Cys Ala Glu Leu Ala Ala Tyr  
 50 55 60  
 Leu Tyr Gly Tyr Val Leu Arg Gln Asn Pro Arg Asp Pro His Trp Ile  
 65 70 75 80  
 Asn Arg Asp Arg Phe Val Leu Ser Ala Gly His Gly Ser Ala Leu Leu  
 85 90 95  
 Tyr Ser Cys Leu His Leu Ala Gly Phe Asp Val Ser Leu Glu Asp Leu  
 100 105 110  
 Gln Glu Phe Arg Gln Leu His Ser Arg Thr Pro Gly His Pro Glu Tyr  
 115 120 125  
 Gly Glu Thr Val Gly Val Glu Ala Thr Thr Gly Pro Leu Gly Gln Gly  
 130 135 140  
 Leu Gly Asn Ala Val Gly Met Ala Leu Ser Met Lys Met Leu Glu Ser  
 145 150 155 160  
 Arg Phe Asn Arg Pro Gly His Glu Ile Phe Asn Gly Lys Ile Tyr Cys  
 165 170 175  
 Leu Ala Gly Asp Gly Cys Phe Met Glu Gly Val Ser His Glu Val Cys  
 180 185 190  
 Ser Phe Ala Gly Ser Leu Asn Leu Asn Asn Leu Val Val Ile Tyr Asp  
 195 200 205  
 Tyr Asn Asn Val Val Leu Asp Gly Tyr Leu Asn Glu Ile Ser Val Glu  
 210 215 220  
 Asp Thr Lys Lys Arg Phe Glu Ala Tyr Gly Trp Glu Tyr Tyr Glu Ile  
 225 230 235 240  
 Asp Gly Tyr Asp Phe Thr His Ile His Glu Thr Phe Ser Ser Ile Lys  
 245 250 255  
 Arg Gly Gln Glu Arg Pro Val Leu Val Ile Ala His Thr Ile Ile Gly  
 260 265 270  
 His Gly Ser Pro Lys Glu Gly Thr Asn Lys Ala His Gly Ser Pro Leu  
 275 280 285  
 Gly Val Glu Gly Thr His Glu Thr Lys Gln Phe Trp His Leu Pro Glu  
 290 295 300  
 Glu Lys Phe Phe Val Pro Ala Val Lys Asn Phe Phe Ala His Lys  
 305 310 315 320  
 Ile Gln Glu Asp Arg Lys Ala Gln Glu Gln Trp Leu Asp Glu Val Arg  
 325 330 335  
 Val Trp Ser Lys Gln Phe Pro Glu Leu His Glu Glu Phe Val Ala Leu  
 340 345 350  
 Thr Ser His Lys Leu Pro Lys Asn Leu Glu Ser Leu Val Gln Ser Val  
 355 360 365  
 Glu Met Pro Asp Ser Ile Ala Gly Arg Ala Ala Ser Asn Lys Leu Ile  
 370 375 380  
 Gln Val Leu Val Gln His Ile Pro Tyr Leu Ile Gly Gly Ser Ala Asp  
 385 390 395 400  
 Leu Ser Ser Ser Asp Gly Thr Trp Ile Ala Asn Glu Lys Val Ile His  
 405 410 415  
 Thr Tyr Asp Phe Ser Gly Arg Asn Ile Lys Tyr Gly Val Arg Glu Phe  
 420 425 430  
 Gly Met Ala Thr Ile Met Asn Gly Leu Ala Tyr Ser Gln Val Phe Arg  
 435 440 445  
 Pro Phe Gly Gly Thr Phe Leu Val Phe Ser Asp Tyr Met Arg Asn Ala  
 450 455 460  
 Ile Arg Leu Ala Ala Leu Ser Lys Leu Pro Val Ile Tyr Gln Phe Thr  
 465 470 475 480  
 His Asp Ser Ile Phe Val Gly Glu Asp Gly Pro Thr His Gln Pro Val  
 485 490 495



Glu Gln Leu Met Ser Leu Arg Ala Ile Pro Gly Leu Tyr Val Ile Arg  
 500 505 510  
 Pro Ala Asp Ala Asn Glu Val Arg Gly Ala Trp Ile Ala Gly Leu Lys  
 515 520 525  
 His Thr Gly Pro Thr Val Ile Val Leu Ser Arg Gln Ala Leu Pro Thr  
 530 535 540  
 Leu Pro Ala Ala His Arg Pro Phe Lys Asp Gly Val Gly Arg Gly Ala  
 545 550 555 560  
 Tyr Ile Val Leu Lys Glu Ser Gly Glu Lys Pro Asp Tyr Thr Leu Phe  
 565 570 575  
 Ala Thr Gly Ser Glu Val Ser Leu Ala Leu Ser Val Ala Lys Glu Leu  
 580 585 590  
 Glu His Leu Asp Lys Gln Val Arg Val Val Ser Phe Pro Cys Trp Glu  
 595 600 605  
 Leu Phe Glu Ala Gln Asp Val Asp Tyr Lys Gln Ser Ile Val Gly Gly  
 610 615 620  
 Asp Leu Gly Ile Arg Val Ser Ile Glu Ala Gly Ser Ala Leu Gly Trp  
 625 630 635 640  
 Tyr Lys Tyr Ile Gly Ser Glu Gly Leu Leu Ser Leu Trp Ile Asp Ser  
 645 650 655  
 Asp Thr Gln Glu Leu Leu Met Met Tyr Gln Lys Asn Val Ala Leu Leu  
 660 665 670  
 Gln Ser Lys Ser Phe Arg Gly Phe Ser Leu Asn Ser His Cys Arg Lys  
 675 680 685  
 Phe Gln Ser Arg  
 690

&lt;210&gt;967

&lt;211&gt;312

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;967

Pro Arg Asn Asp Lys Asn Ala Lys Asn Leu Arg Arg Lys His Tyr Lys  
 1 5 10 15  
 Gly Glu Arg Val Ser Lys His Thr Ser Glu Ser Arg Ile Ala Gln Asp  
 20 25 30  
 Met Leu Glu Arg Tyr Ser Gly Ser Ser Val Lys Gln Phe Cys Pro Tyr  
 35 40 45  
 Leu Leu Leu Thr Asn Phe Ser Tyr Tyr Ile Gln Thr Phe Ala Lys Leu  
 50 55 60  
 His Gly Val Pro Val Phe Glu Gly Ser Met Phe Ser Ala Ala His Ala  
 65 70 75 80  
 Pro His Leu Lys Thr Ser Ile Leu Asp Phe Lys Leu Gly Ser Pro Gly  
 85 90 95  
 Ala Ala Leu Thr Ile Asp Leu Cys Ser Phe Leu Pro Asp Leu Lys Ala  
 100 105 110  
 Ala Leu Met Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Val  
 115 120 125  
 Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Gly Glu Gly Thr Ser  
 130 135 140  
 Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val  
 145 150 155 160  
 Gln Lys Ala Thr Thr Glu Val Leu Glu Asp Lys Lys Ala Asn Tyr His  
 165 170 175  
 Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys  
 180 185 190  
 Lys Phe Arg Lys Lys Leu Tyr Glu Thr Lys Ala Gln Ser Ala Glu Met  
 195 200 205  
 Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Ile  
 210 215 220  
 Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Glu Gly Ile  
 225 230 235 240  
 Lys Thr Lys Ser Ser Gly Asn Phe Ile Phe Asn Thr Tyr Thr Glu Asp  
 245 250 255  
 His Ile Leu Thr Gly Gln Glu Val Ile Glu Asn Leu Glu Lys Val Met

260 265 270  
 Leu Lys Arg Ala Ala Ser Asp His Lys Lys Asp Gln Gln Tyr Arg Gly  
 275 285  
 Leu Pro His Met Glu Val Gly Glu Ala Asp Asp Thr Met Ala Ser Gly  
 290 295 300  
 Ser Glu Thr Ser Asp Ser Asp Tyr  
 305 310

&lt;210&gt;968

&lt;211&gt;190

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;968

Met Val Arg Val Ser Thr Ser Glu Phe Arg Val Gly Leu Arg Ile Glu  
 1 5 10 15  
 Ile Asp Gly Gln Pro Tyr Leu Ile Leu Gln Asn Asp Phe Val Lys Pro  
 20 25 30  
 Gly Lys Gly Gln Ala Phe Asn Arg Ile Lys Val Lys Asn Phe Leu Thr  
 35 40 45  
 Gly Arg Val Ile Glu Arg Thr Tyr Lys Ser Gly Glu Ser Val Glu Thr  
 50 55 60  
 Ala Asp Ile Val Glu Arg Ser Met Arg Leu Leu Tyr Thr Asp Gln Glu  
 65 70 75 80  
 Gly Ala Thr Phe Met Asp Asp Glu Thr Phe Glu Gln Glu Val Val Phe  
 85 90 95  
 Trp Glu Lys Leu Glu Asn Ile Arg Gln Trp Leu Leu Glu Asp Thr Ile  
 100 105 110  
 Tyr Thr Leu Val Leu Tyr Asn Gly Asp Val Val Ala Val Glu Pro Pro  
 115 120 125  
 Ile Phe Met Glu Leu Ser Ile Ala Glu Thr Ala Pro Gly Val Arg Gly  
 130 135 140  
 Asp Thr Ala Ser Gly Arg Val Leu Lys Pro Ala Val Thr Asn Thr Gly  
 145 150 155 160  
 Ala Lys Ile Met Val Pro Ile Phe Ile Asp Glu Gly Glu Leu Val Lys  
 165 170 175  
 Val Asp Thr Arg Thr Gly Ser Tyr Glu Ser Arg Val Ser Lys  
 180 185 190

&lt;210&gt;969

&lt;211&gt;83

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;969

Glu Lys Tyr Phe Phe Phe Thr Val Arg Asn Met Glu Ala Lys Lys Ile  
 1 5 10 15  
 Lys Glu Leu Ser Lys Glu Ala Gln Leu Leu Lys Lys Leu Arg Glu Lys  
 20 25 30  
 Ser Arg Val Leu Asp Glu Lys Asn Lys Arg Lys Ala Trp Val Ala Lys  
 35 40 45  
 Leu Val Ala Met Pro Glu Ser Ile Arg Glu Ile Glu Lys Glu Glu Arg  
 50 55 60  
 Val Glu Thr Pro Gln Leu Phe Gln Ala Ile Ala Glu Lys Ile Leu Glu  
 65 70 75 80  
 Glu Gly Val

&lt;210&gt;970

&lt;211&gt;314

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;970

Asn Phe Ser Leu Asp Ser Asn Thr Val Asp Gln Lys Asn Lys Ser Asn  
 1 5 10 15  
 Pro Arg Pro Met Gln Glu Lys Pro Arg His Val His Arg Ile Ile His  
 20 25 30  
 Ile Ser Asp Val His Phe His Val Leu Pro Val Asn Pro Val His Cys  
 35 40 45

Phe Asn Lys Arg Leu Lys Gly Leu Leu Arg Lys Val Phe Gly Leu Val  
 50 55 60  
 His Phe Gln Ala Thr Thr Ile Gly Gln Arg Phe Pro Lys Val Val Arg  
 65 70 75 80  
 Ser Leu Gly Ala Asp Ser Val Cys Ile Thr Gly Asp Phe Ser Leu Thr  
 85 90 95  
 Ala Met Asp Gly Glu Phe Leu Leu Ala Lys His Phe Val Glu Thr Leu  
 100 105 110  
 Ala Lys His Ser Ser Val Tyr Leu Leu Pro Gly Asn His Asp Val Tyr  
 115 120 125  
 Thr Leu Lys Ser Leu Ala Gln Gln Thr Phe Tyr Thr His Phe Pro Asn  
 130 135 140  
 Asp Gln Leu Gln Gln Asn Lys Val Ser Phe His Lys Ile Thr Asp His  
 145 150 155 160  
 Trp Trp Leu Ile Leu Leu Asp Cys Ser Cys Leu Asn Gly Trp Phe Ser  
 165 170 175  
 Ala Asn Gly Val Val His Leu Ala Gln Ile Ser Ala Ile Glu Thr Phe  
 180 185 190  
 Leu Leu Ser Leu Ser Pro Glu Glu Asn Val Ile Ile Ala Asn His Tyr  
 195 200 205  
 Pro Leu Leu Ser Ser Gln Asn Pro Ser His Asp Leu Ile Asn Asn Thr  
 210 215 220  
 His Leu Gln Asn Val Leu Lys Lys Tyr Pro Lys Val Arg Leu Tyr Leu  
 225 230 235 240  
 His Gly His Glu His Gln Ala Ala Val Tyr Asn Cys Ala Asp Thr Ser  
 245 250 255  
 Pro Ser Tyr Ile Leu Asn Ser Gly Ser Ile Ser Leu Pro Thr Asn Ser  
 260 265 270  
 Arg Phe His Val Ile Asp Leu Tyr Pro Glu Lys Tyr Gln Val His Thr  
 275 280 285  
 Met Ile Leu Lys Asn Leu Leu Asp Phe Asp Ala Pro Leu Glu Ile Ala  
 290 295 300  
 Asn Glu Ala Thr Trp Asp Cys Gln Lys Leu  
 305 310  
 <210>971  
 <211>519  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>971  
 Met Ser Glu Gln Glu Lys Leu Ser Asn Tyr Asn Ala Asp Lys Lys Leu  
 1 5 10 15  
 Phe Ser Gly Ile Asp Lys Leu Phe Gln Ile Val Lys Gly Ser Tyr Gly  
 20 25 30  
 Pro Lys Gln Ser Leu Ser Pro Thr Ser Phe Phe Lys Glu Arg Gly Phe  
 35 40 45  
 Tyr Ala Ile Ser Gln Thr Glu Leu Ser Asn Ser Tyr Glu Asn Leu Gly  
 50 55 60  
 Val Asp Phe Ala Lys Ala Met Val Asn Lys Ile His Lys Glu His Ser  
 65 70 75 80  
 Asp Gly Ala Thr Thr Gly Leu Ile Leu Leu His Ala Ile Leu Gln Glu  
 85 90 95  
 Ser Tyr Ala Ala Leu Glu Lys Gly Ile Ser Thr His Lys Leu Ile Ala  
 100 105 110  
 Ser Leu Lys Leu Gln Gly Glu Lys Leu Gln Glu Ala Leu Gln Gln Gln  
 115 120 125  
 Ser Trp Pro Ile Lys Asp Ala Leu Lys Val Arg Asn Ile Ile Phe Ser  
 130 135 140  
 Ser Leu His Met Pro Thr Ile Ala Asp His Phe Tyr Asn Ala Phe Ser  
 145 150 155 160  
 Val Val Gly Pro Glu Gly Leu Ile Ser Ile Thr Lys Glu Arg Glu Asn  
 165 170 175  
 Asp Lys Thr Ser Met Asp Val Phe Gln Gly Phe Lys Ile Pro Ala Gly  
 180 185 190  
 Tyr Ala Ser Thr Tyr Phe Val Ser Asp Thr Ala Ser Arg Leu Thr Arg

195 200 205  
 Ile Ala His Pro Leu Ile Leu Ile Thr Asp Arg Lys Ile Ser Met Ile  
 210 215 220  
 His Ser Leu Leu Pro Leu Leu Gln Glu Ile Ser Glu Gln Asn Gln His  
 225 230 235 240  
 Leu Ile Ile Phe Cys Glu Asp Ile Asp Pro Asp Val Leu Ala Thr Leu  
 245 250 255  
 Val Val Asn Lys Leu Gln Gly Leu Leu Gln Val Thr Val Val Thr Ile  
 260 265 270  
 Pro Gln Leu Ser Thr Thr Asn Gln Glu Leu Ala Glu Asp Ile Ala Leu  
 275 280 285  
 Phe Thr Gly Thr His Ile Cys Pro Cys Gln Glu Ala Ser His Val Leu  
 290 295 300  
 Ala Pro Glu Met Val Thr Leu Gly Ser Cys Leu Ser Ile Glu Ile Ser  
 305 310 315 320  
 Glu Ser Gln Thr Thr Leu Ile Gly Gly Leu His Ile Pro Glu Val Leu  
 325 330 335  
 Thr Leu Lys Thr Arg Gln Leu Ala Glu Glu Ile Arg Thr Thr Ser Cys  
 340 345 350  
 Leu Glu Thr Lys Lys Arg Leu Ile Lys Ser Thr Asn Arg Leu Gln Ser  
 355 360 365  
 Ser Val Ala Ile Leu Pro Thr Asp Glu Asp Asn Glu Pro Leu Tyr Thr  
 370 375 380  
 Leu Ala Leu Lys Ile Met Glu Ser Ala Leu Ser Arg Gly Tyr Val Pro  
 385 390 395 400  
 Gly Gly Gly Val Ala Leu Phe Tyr Ala Ser Leu Thr Leu Gly Thr Pro  
 405 410 415  
 Lys Asp Asp Ala Asp Glu Asn Ser Ile Ala Ile Ser Leu Leu Gln Lys  
 420 425 430  
 Ala Cys Cys Ala Pro Leu Lys Leu Leu Ala Thr Asn Ala Asp Leu Asp  
 435 440 445  
 Gly Asp Ala Val Ile Ala Lys Leu Ser Ser Leu Gly Thr Thr Ser Leu  
 450 455 460  
 Gly Ile Ser Val Phe Ser Arg Glu Ile Glu Asp Leu Ile Ala Gly Gly  
 465 470 475 480  
 Ile Leu Asp Ser Leu Ala Thr Thr Ser Thr Ile Leu Ala Gln Ala Leu  
 485 490 495  
 Asp Thr Ala Ile Leu Val Leu Ser Ser Lys Ile Leu Ile Leu Glu Asn  
 500 505 510  
 Gln Tyr Glu Ile Ser Thr Leu  
 515

&lt;210&gt;972

&lt;211&gt;447

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;972

Met Arg Ala Met Leu Leu Glu Asp Trp Val Ser Leu Met Leu Ser Asp  
 1 5 10 15  
 Val Ser Cys Pro Lys Cys Asp Lys Lys Ile Thr Gly Phe Ala Ile Asp  
 20 25 30  
 Ser Gln Lys Val Gln Pro Gly Asp Leu Phe Phe Ala Leu Pro Gly Asn  
 35 40 45  
 Ala Thr Asp Gly His Gln Phe Leu Lys His Ala Ala Thr Ala Gly Ala  
 50 55 60  
 Val Ala Ala Val Val Ser His Asp Tyr Gln Gly Asp Ser Phe Gly Leu  
 65 70 75 80  
 Glu Leu Ile Arg Val Asp Asp Thr Lys Ser Ala Leu Gln Glu Ala Gly  
 85 90 95  
 Ser Asn Gln Cys Asn Leu Phe Gln Gly Thr Leu Val Gly Ile Thr Gly  
 100 105 110  
 Ser Val Gly Lys Thr Thr Thr Lys Glu Phe Ser Lys Thr Ile Leu Ser  
 115 120 125  
 Ser Ile Tyr Lys Thr His Ala Ser Pro Lys Ser Tyr Asn Ser Gln Leu  
 130 135 140

Thr Val Pro Leu Ser Leu Leu Met Ala Glu Gly Asp Glu Asp Val Met  
 145 150 155 160  
 Ile Leu Glu Met Gly Val Ser Glu Pro Gly Asn Met Gln Asp Leu Leu  
 165 170 175  
 Arg Ile Val Gln Pro Glu Ile Ala Val Ile Thr His Ile Asn Asp Gln  
 180 185 190  
 His Ala Met His Phe Pro Gln Gly Ile Gln Glu Ile Leu Lys Glu Lys  
 195 200 205  
 Ser Tyr Ile Leu Gln Lys Ser Lys Leu Gln Leu Leu Pro Lys Asp Ser  
 210 215 220  
 Pro Tyr Tyr Leu Asp Leu Arg Ser Cys Ser Pro Thr Ala Glu Lys Phe  
 225 230 235 240  
 Ser Phe Ser Phe Asn Asp Pro Leu Ala Asp Phe Cys Tyr Lys Ala Ile  
 245 250 255  
 Ser Gly Asp Ser Val Val Ile Gln Thr Pro Glu Glu Asn Tyr Cys Leu  
 260 265 270  
 Pro Ile Ala Phe Ser Tyr Lys Pro Ala Tyr Thr Asn Leu Leu Ile Ala  
 275 280 285  
 Val Ala Leu Ser Trp Ile Leu Glu Val Pro Glu Glu Gly Val Ile Arg  
 290 295 300  
 Ser Leu Pro Glu Leu Lys Leu Pro Pro Met Arg Phe Glu His Ser Met  
 305 310 315 320  
 Arg Asn Gly Met Gln Val Ile Asn Asp Ala Tyr Asn Ala Cys Pro Glu  
 325 330 335  
 Ala Met Ile Ala Ala Leu Asp Ala Leu Pro Leu Pro Ser Asp Gly Gly  
 340 345 350  
 Lys Ile Ile Leu Ile Leu Gly His Met Ala Glu Leu Gly Arg Tyr Ser  
 355 360 365  
 Glu Glu Gly His Ala Leu Val Ala Glu Lys Ala Ala Ser Arg Gly Asp  
 370 375 380  
 Met Ile Phe Phe Ile Gly Glu Lys Trp Ile Pro Val Gln Ser Val Leu  
 385 390 395 400  
 Lys Ser Tyr Ser Cys Glu Val Ser Phe Phe Ser Ser Ala Gln Asp Val  
 405 410 415  
 Lys Asp Ile Leu Lys Gln Val Ala Arg Tyr Gly Asp Val Ile Leu Leu  
 420 425 430  
 Lys Gly Ser Arg Ala Leu Ala Leu Glu Ser Leu Leu Ala Cys Phe  
 435 440 445

&lt;210&gt;973

&lt;211&gt;349

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;973

Met Ile Pro Leu Ile Pro Met Phe Leu Lys Gln Ser Leu Phe Phe Ser  
 1 5 10 15  
 Leu Ala Leu Thr Gly Met Thr Thr Leu Val Leu Thr Val Ser Leu Gly  
 20 25 30  
 Val Pro Val Met Lys Trp Leu Lys Arg Lys Asn Tyr Arg Asp Tyr Ile  
 35 40 45  
 His Lys Glu Tyr Cys Glu Lys Leu Glu Met Leu His Lys Asp Lys Ala  
 50 55 60  
 Glu Val Pro Thr Gly Gly Gly Val Leu Leu Phe Ile Ser Leu Ile Ala  
 65 70 75 80  
 Ser Leu Leu Val Trp Leu Pro Trp Gly Lys Phe Ser Thr Trp Phe Phe  
 85 90 95  
 Ile Ile Leu Leu Thr Cys Tyr Ala Gly Leu Gly Trp Tyr Asp Asp Arg  
 100 105 110  
 Ile Lys Ile Lys Arg Lys Gln Gly His Gly Leu Lys Ala Lys His Lys  
 115 120 125  
 Phe Met Val Gln Ile Ala Ile Ala Ala Phe Thr Leu Ile Ala Leu Pro  
 130 135 140  
 Tyr Ile Tyr Gly Ser Thr Glu Pro Leu Trp Thr Leu Lys Ile Pro Phe  
 145 150 155 160  
 Met Glu Gly Met Leu Ser Leu Pro Phe Trp Leu Gly Lys Val Phe Cys

165 170 175  
 Leu Gly Leu Ala Leu Val Ala Ile Ile Gly Thr Ser Asn Ala Val Asn  
 180 185 190  
 Leu Thr Asp Gly Leu Asp Gly Leu Ala Ala Gly Thr Met Ser Phe Ala  
 195 200 205  
 Ala Leu Gly Phe Ile Phe Val Ala Leu Arg Ser Ser Thr Ile Pro Ile  
 210 215 220  
 Ala Gln Asp Val Ala Tyr Val Leu Ala Ala Leu Val Gly Ala Cys Ile  
 225 230 235 240  
 Gly Phe Leu Trp Tyr Asn Gly Phe Pro Ala Gln Leu Phe Met Gly Asp  
 245 250 255  
 Thr Gly Ser Leu Leu Leu Gly Gly Leu Leu Gly Ser Cys Ala Val Met  
 260 265 270  
 Leu Arg Ala Glu Cys Ile Leu Val Val Ile Gly Gly Val Phe Val Ala  
 275 280 285  
 Glu Ala Gly Ser Val Ile Leu Gln Val Leu Ser Cys Arg Leu Arg Lys  
 290 295 300  
 Lys Arg Leu Phe Leu Cys Ser Pro Leu His His His Tyr Glu Tyr Gln  
 305 310 315 320  
 Gly Leu Pro Glu Thr Lys Ile Val Met Arg Phe Trp Ile Phe Ser Phe  
 325 330 335  
 Val Cys Ala Gly Leu Gly Ile Ala Ala Val Leu Trp Arg  
 340 345

&lt;210&gt;974

&lt;211&gt;419

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;974

Met Arg Arg Ser Arg Tyr Ser Gly Cys Leu Met Glu Ile Asp Met Cys  
 1 5 10 15  
 Gln Arg Ile Leu Ile Leu Gly Thr Gly Ile Thr Gly Lys Ser Val Ala  
 20 25 30  
 Arg Phe Leu Tyr Gln Gln Gly His Tyr Leu Ile Gly Ala Asp Asn Ser  
 35 40 45  
 Leu Glu Ser Leu Ile Ser Val Asp His Leu His Asp Arg Leu Leu Met  
 50 55 60  
 Gly Ala Ser Glu Phe Pro Glu Asn Ile Asp Leu Val Ile Arg Ser Pro  
 65 70 75 80  
 Gly Ile Lys Pro Tyr His Pro Trp Val Glu Gln Ala Val Ser Leu Lys  
 85 90 95  
 Ile Pro Val Val Thr Asp Ile Gln Val Ala Leu Lys Thr Pro Glu Phe  
 100 105 110  
 Gln Arg Tyr Pro Ser Phe Gly Ile Thr Gly Ser Asn Gly Lys Thr Thr  
 115 120 125  
 Thr Thr Leu Phe Leu Thr His Leu Leu Asn Thr Leu Gly Ile Pro Ala  
 130 135 140  
 Ile Ala Met Gly Asn Ile Gly Leu Pro Ile Leu Asp His Met Gly Gln  
 145 150 155 160  
 Pro Gly Val Arg Val Val Glu Ile Ser Ser Phe Gln Leu Ala Thr Gln  
 165 170 175  
 Glu Glu His Ile Pro Ala Leu Ser Gly Ser Val Phe Leu Asn Phe Ser  
 180 185 190  
 Arg Asn His Leu Asp Tyr His Arg Asn Leu Asp Ala Tyr Phe Asp Ala  
 195 200 205  
 Lys Leu Arg Ile Gln Lys Cys Leu Arg Gln Asp Lys Thr Phe Trp Val  
 210 215 220  
 Trp Glu Glu Cys Ser Leu Gly Asn Ser Tyr Gln Ile Tyr Ser Glu Glu  
 225 230 235 240  
 Ile Glu Glu Ile Leu Asp Lys Gly Asp Ala Leu Lys Pro Ile Tyr Leu  
 245 250 255  
 His Asp Arg Asp Asn Tyr Cys Ala Ala Tyr Ala Leu Ala Asn Glu Val  
 260 265 270  
 Gly Trp Val Ser Pro Glu Gly Phe Leu Lys Ala Ile Arg Thr Phe Glu  
 275 280 285

Lys Pro Ala His Arg Leu Glu Tyr Leu Gly Lys Lys Asp Gly Val His  
 290 295 300  
 Tyr Ile Asn Asp Ser Lys Ala Thr Thr Val Thr Ala Val Glu Lys Ala  
 305 310 315 320  
 Leu Met Ala Val Gly Lys Asp Val Ile Val Ile Leu Gly Gly Lys Asp  
 325 330 335  
 Lys Gly Gly Asp Phe Pro Ala Leu Ala Ser Val Leu Ser Gln Thr Thr  
 340 345 350  
 Lys His Val Ile Ala Met Gly Glu Cys Arg Gln Thr Ile Ala Asp Ala  
 355 360 365  
 Leu Ser Glu Lys Ile Pro Leu Thr Leu Ser Lys Asp Leu Gln Glu Ala  
 370 375 380  
 Val Ser Ile Ala Gln Thr Ile Ala Gln Glu Gly Asp Thr Val Leu Leu  
 385 390 395 400  
 Ser Pro Gly Cys Ala Xaa Leu Ile Ser Phe Lys Val Leu Lys Asn Ala  
 405 410 415  
 Xaa Leu Leu

&lt;310&gt;975

&lt;311&gt;352

&lt;312&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;975

Arg Thr Arg Xaa Tyr Phe Lys Leu Leu Ile Arg Arg Asn Ala Gly Ser  
 1 5 10 15  
 Glu Val Asn Met Asn Arg Arg Asp Met Val Ile Thr Ala Val Val Val  
 20 25 30  
 Asn Ala Ile Leu Leu Val Ala Leu Phe Val Thr Ser Lys Arg Ile Gly  
 35 40 45  
 Val Lys Asp Tyr Asp Glu Gly Phe Arg Asn Phe Ala Ser Ser Lys Val  
 50 55 60  
 Thr Gln Ala Val Val Ser Glu Glu Lys Val Ile Glu Lys Pro Val Val  
 65 70 75 80  
 Ala Glu Val Pro Ser Arg Pro Ile Ala Lys Glu Thr Leu Ala Ala Gln  
 85 90 95  
 Phe Ile Glu Ser Lys Pro Val Ile Val Thr Thr Pro Pro Val Pro Val  
 100 105 110  
 Val Ser Glu Thr Pro Glu Val Pro Thr Val Ala Val Pro Pro Gln Pro  
 115 120 125  
 Val Arg Glu Thr Val Lys Glu Glu Gln Ala Pro Tyr Ala Thr Val Val  
 130 135 140  
 Val Lys Lys Gly Asp Phe Leu Glu Arg Ile Ala Arg Ala Asn His Thr  
 145 150 155 160  
 Thr Val Ala Lys Leu Met Gln Ile Asn Asp Leu Thr Thr Thr Gln Leu  
 165 170 175  
 Lys Ile Gly Gln Val Ile Lys Val Pro Thr Ser Gln Asp Val Ser Asn  
 180 185 190  
 Glu Lys Thr Pro Gln Thr Gln Thr Ala Asn Pro Glu Asn Tyr Tyr Ile  
 195 200 205  
 Val Gln Glu Gly Asp Ser Pro Trp Thr Ile Ala Leu Arg Asn His Ile  
 210 215 220  
 Arg Leu Asp Asp Leu Leu Lys Met Asn Asp Leu Asp Glu Tyr Lys Ala  
 225 230 235 240  
 Arg Arg Leu Lys Pro Gly Asp Gln Leu Arg Ile Arg  
 245 250

&lt;210&gt;976

&lt;211&gt;385

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;976

Met Lys Trp Phe Val Ile Ser Cys Leu Leu Gly Ile Phe Ser Leu Gly  
 1 5 10 15  
 Leu Ile Met Val Phe Glu Thr Ser Ser Ala Glu Val Leu Asp Arg Ser  
 20 25 30

Leu Glu Cys Ser Thr His Lys Ala Leu Ile Arg Gln Val Thr Tyr Leu  
 35 40 45  
 Ile Leu Gly Leu Gly Val Ala Ser Leu Leu Tyr Met Met Glu Trp Arg  
 50 55 60  
 Asp Phe Leu Lys Ile Ser Pro Val Leu Leu Ser Gly Ala Ala Leu Ala  
 65 70 75 80  
 Leu Ile Cys Val Phe Ile Pro Gly Leu Gly Ile Cys Arg Asn Gly Ala  
 85 90 95  
 Arg Arg Trp Leu Gly Phe Gly Gln Leu Thr Ile Gln Pro Ser Glu Phe  
 100 105 110  
 Val Lys Tyr Leu Val Pro Ile Val Ala Leu Tyr Phe Leu Thr Phe Ser  
 115 120 125  
 Ser Leu Tyr Gln Lys Gln Leu Lys Met Phe Leu Lys Leu Thr Ala Ile  
 130 135 140  
 Leu Phe Ile Pro Ile Leu Leu Ile Ala Ile Glu Pro Asp Asn Gly Ser  
 145 150 155 160  
 Ala Ala Val Ile Ser Ala Ser Leu Ile Pro Val Phe Ile Met Thr Ser  
 165 170 175  
 Val Arg Leu Arg Tyr Trp Leu Leu Pro Leu Leu Cys Val Leu Ile Ala  
 180 185 190  
 Gly Gly Ala Leu Ala Tyr Arg Met Pro Tyr Val Arg Tyr Arg Leu Asn  
 195 200 205  
 Val Tyr Leu His Pro Glu Leu Asp Ile Lys Gly Arg Gly His Gln Pro  
 210 215 220  
 Tyr Gln Ala Lys Ile Ala Ala Gly Ser Gly Lys Leu Leu Gly Lys Gly  
 225 230 235 240  
 Pro Gly Ala Ser Leu Gln Lys Leu Thr Tyr Leu Pro Glu Ala Gln Asn  
 245 250 255  
 Asp Tyr Ile Ala Ala Ile Tyr Ala Glu Glu Phe Gly Phe Leu Gly Met  
 260 265 270  
 Leu Val Leu Ile Leu Leu Tyr Met Cys Phe Val Tyr Gly Gly Tyr Ala  
 275 280 285  
 Ile Ala Ile Lys Ala Ser Ser Leu Glu Gly Ala Ala Leu Ala Met Val  
 290 295 300  
 Ile Thr Leu Ile Ile Ser Met Gln Ala Phe Met Asn Leu Gly Val Val  
 305 310 315 320  
 Ser Gly Leu Leu Pro Ser Lys Gly Val Asn Leu Pro Phe Phe Ser Gln  
 325 330 335  
 Gly Gly Ser Ser Leu Ile Ala Asn Met Cys Gly Val Thr Leu Leu Leu  
 340 345 350  
 Lys Val Tyr Asp Glu Glu Asn Ser Lys Ser Ser Leu Gly Cys Arg Arg  
 355 360 365  
 Phe Arg Arg Pro His Cys Pro Ser Ser Leu Gly Lys Gly Ser Phe Phe  
 370 375 380  
 Ser  
 385  
 <210>977  
 <211>357  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>977  
 Met Met Lys Lys Ile Arg Lys Val Ala Leu Ala Val Gly Gly Ser Gly  
 1 5 10 15  
 Gly His Ile Val Pro Ala Leu Ser Val Lys Glu Ala Phe Ser Arg Glu  
 20 25 30  
 Gly Ile Asp Val Leu Leu Leu Gly Lys Gly Leu Lys Asn His Pro Ser  
 35 40 45  
 Leu Gln Gln Gly Ile Ser Tyr Arg Glu Ile Pro Ser Gly Leu Pro Thr  
 50 55 60  
 Val Leu Asn Pro Ile Lys Ile Met Ser Arg Thr Leu Ser Leu Cys Ser  
 65 70 75 80  
 Gly Tyr Leu Lys Ala Arg Lys Glu Leu Lys Ile Phe Asp Pro Asp Leu  
 85 90 95  
 Val Ile Gly Phe Gly Ser Tyr His Ser Leu Pro Val Leu Leu Ala Gly



100 105 110  
 Leu Ser His Lys Ile Pro Leu Phe Leu His Glu Gln Asn Leu Val Pro  
 115 120 125  
 Gly Lys Val Asn Gln Leu Phe Ser Arg Tyr Ala Arg Gly Ile Gly Val  
 130 135 140  
 Asn Phe Ser Pro Val Thr Lys His Phe Arg Cys Pro Ala Glu Glu Val  
 145 150 155 160  
 Phe Leu Pro Lys Arg Ser Phe Ser Leu Gly Ser Pro Met Met Lys Arg  
 165 170 175  
 Cys Thr Asn His Thr Pro Thr Ile Cys Val Val Gly Gly Ser Gln Gly  
 180 185 190  
 Ala Gln Ile Leu Asn Thr Cys Val Pro Gln Ala Leu Val Lys Leu Val  
 195 200 205  
 Asn Lys Tyr Pro Asn Met Tyr Val His His Ile Val Gly Pro Lys Ser  
 210 215 220  
 Asp Val Met Lys Val Gln His Val Tyr Asn Arg Gly Glu Val Leu Cys  
 225 230 235 240  
 Cys Val Lys Pro Phe Glu Glu Gln Leu Leu Asp Val Leu Leu Ala Ala  
 245 250 255  
 Asp Leu Val Ile Ser Arg Ala Gly Ala Thr Ile Leu Glu Glu Ile Leu  
 260 265 270  
 Trp Ala Lys Val Pro Gly Ile Leu Ile Pro Tyr Pro Gly Ala Tyr Gly  
 275 280 285  
 His Gln Glu Val Asn Ala Lys Phe Phe Val Asp Val Leu Glu Gly Gly  
 290 295 300  
 Thr Met Ile Leu Glu Lys Glu Leu Thr Glu Lys Leu Leu Val Glu Lys  
 305 310 315 320  
 Val Thr Phe Ala Leu Asp Ser His Asn Arg Glu Lys Gln Arg Asn Ser  
 325 330 335  
 Leu Ala Ala Tyr Ser Gln Gln Arg Ser Thr Lys Thr Phe His Ala Phe  
 340 345 350  
 Ile Cys Glu Cys Leu  
 355

&lt;210&gt;978

&lt;211&gt;812

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;978

Val His Tyr Met Lys Gly Thr Pro Gln Tyr His Phe Ile Gly Ile Gly  
 1 5 10 15  
 Gly Ile Gly Met Ser Ala Leu Ala His Ile Leu Leu Asp Arg Gly Tyr  
 20 25 30  
 Glu Val Ser Gly Ser Asp Leu Tyr Glu Ser Tyr Thr Ile Glu Ser Leu  
 35 40 45  
 Lys Ala Lys Gly Ala Arg Cys Phe Ser Gly His Asp Ser Ser His Val  
 50 55 60  
 Pro His Asp Ala Val Val Tyr Ser Ser Ser Ile Ala Pro Asp Asn  
 65 70 75 80  
 Val Glu Tyr Leu Thr Ala Ile Gln Arg Ser Ser Arg Leu Leu His Arg  
 85 90 95  
 Ala Glu Leu Leu Ser Gln Leu Met Glu Gly Tyr Glu Ser Ile Leu Val  
 100 105 110  
 Ser Gly Ser His Gly Lys Thr Gly Thr Ser Ser Leu Ile Arg Ala Ile  
 115 120 125  
 Phe Gln Glu Ala Gln Lys Asp Pro Ser Tyr Ala Ile Gly Gly Leu Ala  
 130 135 140  
 Ala Asn Cys Leu Asn Gly Tyr Ser Gly Ser Ser Lys Ile Phe Val Ala  
 145 150 155 160  
 Glu Ala Asp Glu Ser Asp Gly Ser Leu Lys His Tyr Thr Pro Arg Ala  
 165 170 175  
 Val Val Ile Thr Asn Ile Asp Asn Glu His Leu Asn Asn Tyr Ala Gly  
 180 185 190  
 Asn Leu Asp Asn Leu Val Gln Val Ile Gln Asp Phe Ser Arg Lys Val  
 195 200 205

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asp | Leu | Asn | Lys | Val | Phe | Tyr | Asn | Gly | Asp | Cys | Pro | Ile | Leu | Lys |
| 210 |     |     |     |     |     | 215 |     |     |     | 220 |     |     |     |     |     |
| Gly | Asn | Val | Gln | Gly | Ile | Ser | Tyr | Gly | Tyr | Ser | Pro | Glu | Cys | Gln | Leu |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| His | Ile | Val | Ser | Tyr | Asn | Gln | Lys | Ala | Trp | Gln | Ser | His | Phe | Ser | Phe |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Thr | Phe | Leu | Gly | Gln | Glu | Tyr | Gln | Asp | Ile | Glu | Leu | Asn | Leu | Pro | Gly |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Gln | His | Asn | Ala | Ala | Asn | Ala | Ala | Ala | Ala | Cys | Gly | Val | Ala | Leu | Thr |
|     |     | 275 |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Phe | Gly | Ile | Asp | Ile | Asn | Ile | Ile | Arg | Lys | Ala | Leu | Lys | Lys | Phe | Ser |
| 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |     |
| Gly | Val | His | Arg | Arg | Leu | Glu | Arg | Lys | Asn | Ile | Ser | Glu | Ser | Phe | Leu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Phe | Leu | Glu | Asp | Tyr | Ala | His | His | Pro | Val | Glu | Val | Ala | His | Thr | Leu |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |
| Arg | Ser | Val | Arg | Asp | Ala | Val | Gly | Leu | Arg | Arg | Val | Ile | Ala | Ile | Phe |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Gln | Pro | His | Arg | Phe | Ser | Arg | Leu | Glu | Glu | Cys | Leu | Gln | Thr | Phe | Pro |
|     |     | 355 |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |
| Lys | Ala | Phe | Gln | Glu | Ala | Asp | Glu | Val | Ile | Leu | Thr | Asp | Val | Tyr | Ser |
| 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |     |
| Ala | Gly | Glu | Ser | Pro | Arg | Glu | Ser | Ile | Ile | Leu | Ser | Asp | Leu | Ala | Glu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Gln | Ile | Arg | Lys | Ser | Ser | Tyr | Val | His | Cys | Cys | Tyr | Val | Pro | His | Gly |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |     |
| Asp | Ile | Val | Asp | Tyr | Leu | Arg | Asn | Tyr | Ile | Arg | Ile | His | Asp | Val | Cys |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Val | Ser | Leu | Gly | Ala | Gly | Asn | Ile | Tyr | Thr | Ile | Gly | Glu | Ala | Leu | Lys |
|     |     | 435 |     |     |     | 440 |     |     |     |     |     | 445 |     |     |     |
| Asp | Phe | Asn | Pro | Lys | Lys | Leu | Ser | Ile | Gly | Leu | Val | Cys | Gly | Gly | Lys |
| 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |     |
| Ser | Cys | Glu | His | Asp | Ile | Ser | Leu | Leu | Ser | Ala | Gln | His | Val | Ser | Lys |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Tyr | Ile | Ser | Pro | Glu | Phe | Tyr | Asp | Val | Ser | Tyr | Phe | Ile | Ile | Asn | Arg |
|     |     |     | 485 |     |     |     |     | 490 |     |     |     |     |     | 495 |     |
| Gln | Gly | Leu | Trp | Arg | Thr | Gly | Lys | Asp | Phe | Pro | His | Leu | Ile | Glu | Glu |
|     |     | 500 |     |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Thr | Gln | Gly | Asp | Ser | Pro | Leu | Ser | Ser | Glu | Ile | Ala | Ser | Ala | Leu | Ala |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Lys | Val | Asp | Cys | Leu | Phe | Pro | Val | Leu | His | Gly | Pro | Phe | Gly | Glu | Asp |
|     |     | 530 |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Gly | Thr | Ile | Gln | Gly | Phe | Phe | Glu | Ile | Leu | Gly | Lys | Pro | Tyr | Ala | Gly |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Pro | Ser | Leu | Ser | Leu | Ala | Ala | Thr | Ala | Met | Asp | Lys | Leu | Leu | Thr | Lys |
|     |     |     | 565 |     |     |     |     | 570 |     |     |     |     |     | 575 |     |
| Arg | Ile | Ala | Ser | Ala | Val | Gly | Val | Pro | Val | Val | Pro | Tyr | Gln | Pro | Leu |
|     |     | 580 |     |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Asn | Leu | Cys | Phe | Trp | Lys | Arg | Asn | Pro | Glu | Leu | Cys | Ile | Gln | Asn | Leu |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Ile | Glu | Thr | Phe | Ser | Phe | Pro | Met | Ile | Val | Lys | Thr | Ala | His | Leu | Gly |
| 610 |     |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |     |
| Ser | Ser | Ile | Gly | Ile | Phe | Leu | Val | Arg | Asp | Lys | Glu | Glu | Leu | Gln | Glu |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Lys | Ile | Ser | Glu | Ala | Phe | Leu | Tyr | Asp | Thr | Asp | Val | Phe | Val | Glu | Glu |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Ser | Arg | Leu | Gly | Ser | Arg | Glu | Ile | Glu | Val | Ser | Cys | Ile | Gly | His | Ser |
|     |     | 660 |     |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Ser | Ser | Trp | Tyr | Cys | Met | Ala | Gly | Pro | Asn | Glu | Arg | Cys | Gly | Ala | Ser |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Gly | Phe | Ile | Asp | Tyr | Gln | Glu | Lys | Tyr | Gly | Phe | Asp | Gly | Ile | Asp | Cys |
| 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |     |
| Ala | Lys | Ile | Ser | Phe | Asp | Leu | Gln | Leu | Ser | Gln | Glu | Ser | Leu | Asp | Cys |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |

Val Arg Glu Leu Ala Glu Arg Val Tyr Arg Ala Met Gln Gly Lys Gly  
 725 730 735  
 Ser Ala Arg Ile Asp Phe Phe Leu Asp Glu Glu Gly Asn Tyr Trp Leu  
 740 745 750  
 Ser Glu Val Asn Pro Ile Pro Gly Met Thr Ala Ala Ser Pro Phe Leu  
 755 760 765  
 Gln Ala Phe Val His Ala Gly Trp Thr Gln Glu Gln Ile Val Asp His  
 770 775 780  
 Phe Ile Ile Asp Ala Leu His Lys Phe Asp Lys Gln Gln Thr Ile Glu  
 785 790 795 800  
 Gln Ala Phe Thr Lys Glu Gln Asp Leu Val Lys Arg  
 805 810

&lt;210&gt;979

&lt;211&gt;192

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;979

Leu Val Asn Asp Ser Gln Leu Ser Arg Glu Ala Ser Ala Phe Arg Leu  
 1 5 10 15  
 Asp Ile Asp Phe Phe Ile Leu Asn Ile Tyr Pro Phe Phe Arg Asn Phe  
 20 25 30  
 Lys Asn Ile Glu Leu Cys Phe Phe Leu Ser Ile Ser Gln Phe Asn Leu  
 35 40 45  
 Asp Phe Met Glu Glu Phe Val Ala Tyr Ile Val Lys Asn Leu Val Thr  
 50 55 60  
 Asn Pro Glu Ala Val Glu Ile Arg Ser Ile Glu Asp Glu Asp Asn Glu  
 65 70 75 80  
 Ser Ile Lys Leu Glu Ile Arg Val Ala Ala Glu Asp Ile Gly Lys Ile  
 85 90 95  
 Ile Gly Arg Arg Gly Asn Thr Ile His Ala Leu Arg Thr Ile Leu Arg  
 100 105 110  
 Arg Val Cys Ser Arg Leu Lys Lys Lys Val Gln Ile Asp Leu Val Gln  
 115 120 125  
 Pro Glu Asn Gly Thr Asp Val Ile Ala Asp Gln Asp Tyr Ile Cys Asp  
 130 135 140  
 Asn Asp Ser Ser Asn Ser Thr Glu Asp Thr Phe Gly Glu Ser Asp Thr  
 145 150 155 160  
 Cys Cys Ser Gly His Cys His Tyr Asp Glu Asp Leu Asn Gln Glu Glu  
 165 170 175  
 Gln Glu Glu Gly Asn Met His His Ser Cys Glu Cys Ser Asn His His  
 180 185 190

&lt;210&gt;980

&lt;211&gt;120

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;980

Lys Phe Leu Ile Ile Lys Ser Ser Met Thr Ala Val Leu Ile Leu Thr  
 1 5 10 15  
 Ser Phe Pro Ser Glu Glu Ser Ala Arg Ser Leu Ala Arg His Leu Ile  
 20 25 30  
 Thr Glu Arg Leu Ala Ser Cys Val His Val Phe Pro Lys Gly Thr Ser  
 35 40 45  
 Thr Tyr Leu Trp Glu Gly Lys Leu Cys Glu Ser Glu Glu His His Ile  
 50 55 60  
 Gln Ile Lys Ser Ile Asp Ile Arg Phe Ser Glu Ile Cys Leu Ala Ile  
 65 70 75 80  
 Gln Glu Phe Ser Gly Tyr Glu Val Pro Glu Val Leu Leu Phe Pro Ile  
 85 90 95  
 Glu Asn Gly Asp Pro Arg Tyr Leu Asn Trp Leu Thr Ile Leu Ser Tyr  
 100 105 110  
 Pro Glu Lys Pro Pro Leu Ser Asp  
 115 120

&lt;210&gt;981

&lt;211&gt;213

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;981

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Ile Leu Ala Ile Leu Phe Met Ile Ile Ile Lys Asn Asn Glu Leu Met
 1           5           10           15
Ile Arg Arg Phe Phe Lys Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser
           20           25           30
Leu Cys Tyr Ala Ser Ile Leu Ile Val Leu Ser Ser Leu Val Cys Val
           35           40           45
Pro Thr Phe Cys Trp Leu Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe
           50           55           60
Asn Pro Ser Pro Ile Arg Asn Leu Phe Leu Val Ser Ser Thr Leu Ser
           65           70           75           80
Lys Val Pro Pro Thr Ala Ile Ala Glu His Leu Arg Leu Ser Ala Asp
           85           90           95
Ala Pro Thr Tyr Leu His Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser
           100          105          110
Leu His Ala Leu Gly Ile Phe Ser Ser Leu Val Ile Glu Lys Ser Pro
           115          120          125
Asp Asn Lys Gly Ile Thr Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala
           130          135          140
Tyr Val Gly Asn Arg Ser Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys
           145          150          155          160
Phe Leu Gly Gln Pro Tyr Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe
           165          170          175
Phe Ser Gln Glu Asp Leu Lys Met Gln Lys Leu Pro Lys Glu Lys Met
           180          185          190
Leu Phe Thr Lys Ile Leu Leu Lys Glu Leu Ala Met Glu Ser Pro Lys
           195          200          205
Ile Ile Asp Leu Ser
           210

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&lt;210&gt;982

&lt;211&gt;107

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;982

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Leu Glu Arg Leu Leu Met Asn Leu Ser Ala Lys Glu Tyr Gly Asp Ile
 1           5           10           15
Ile Val Ile Tyr Leu Gln Gly Ser Leu Asp Ala Val Ser Val Pro Ser
           20           25           30
Val Gln Glu Tyr Leu Glu Gln Phe Ile Gln Lys Lys His Leu Lys Ile
           35           40           45
Ala Leu Asn Phe Thr Asp Val Ser Tyr Ile Ser Ser Ala Gly Ile Arg
           50           55           60
Leu Leu Leu Ser Asn Phe Lys Leu Val Gln Ser Leu Gly Gly Lys Met
           65           70           75           80
Cys Leu Cys Cys Val Lys Glu Ser Val Thr Glu Val Met Arg Ile Ala
           85           90           95
Arg Phe Arg Gln Met Ile Leu Leu Cys Gln Val
           100          105

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&lt;210&gt;983

&lt;211&gt;342

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;983

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Met Leu Pro Phe Glu Phe Glu Phe Asn Thr Thr Ser Ser Pro Glu Cys
 1           5           10           15
Asp Val Cys Leu Asp Pro Gln Lys Leu Phe Val Lys Leu Phe Lys Arg
           20           25           30
Thr Ile Val Leu Leu Ser Gly Pro Thr Gly Ser Gly Lys Thr Asp Val
           35           40           45
Ser Leu Ala Leu Ala Pro Met Ile Asp Gly Glu Ile Val Ser Val Asp
           50           55           60
Ser Met Gln Val Tyr Gln Gly Met Asp Ile Gly Thr Ala Lys Val Ser

```

65 70 75 80  
 Leu Lys Ala Arg Gln Glu Ile Pro His His Leu Ile Asp Ile Arg His  
 85 90 95  
 Val Gln Glu Pro Phe Asn Val Val Asp Phe Tyr Tyr Glu Ala Ile Gln  
 100 105 110  
 Ala Cys Gln Asn Ile Leu Ser Arg Asn Lys Val Pro Ile Leu Val Gly  
 115 120 125  
 Gly Ser Gly Phe Tyr Phe His Ala Phe Leu Ser Gly Pro Pro Lys Gly  
 130 135 140  
 Pro Ala Ala Asp Pro Gln Ile Arg Glu Gln Leu Glu Ala Ile Ala Glu  
 145 150 155 160  
 Glu His Gly Val Ser Ala Leu Tyr Glu Asp Leu Leu Leu Lys Asp Pro  
 165 170 175  
 Glu Tyr Ala Gln Thr Ile Thr Lys Asn Asp Lys Asn Lys Ile Ile Arg  
 180 185 190  
 Gly Leu Glu Ile Ile Gln Leu Thr Gly Lys Lys Val Ser Asp His Glu  
 195 200 205  
 Trp Asp Ile Val Pro Lys Ala Ser Arg Glu Tyr Cys Cys Arg Ala Trp  
 210 215 220  
 Phe Leu Ser Pro Glu Thr Glu Phe Leu Lys Asn Asn Ile Gln Met Arg  
 225 230 235 240  
 Cys Glu Ala Met Leu Gln Glu Gly Leu Leu Glu Glu Val Arg Gly Leu  
 245 250 255  
 Leu Asn Gln Gly Ile Arg Glu Asn Pro Ser Ala Phe Lys Ala Ile Gly  
 260 265 270  
 Tyr Arg Glu Trp Ile Glu Phe Leu Asp Asn Gly Glu Lys Leu Glu Glu  
 275 280 285  
 Tyr Glu Glu Thr Lys Arg Lys Phe Val Ser Asn Ser Trp His Tyr Thr  
 290 295 300  
 Lys Lys Gln Lys Thr Trp Phe Lys Arg Tyr Ser Ile Phe Arg Glu Leu  
 305 310 315 320  
 Pro Thr Leu Gly Leu Ser Ser Asp Ala Ile Ala Gln Lys Ile Ala Lys  
 325 330 335  
 Asp Tyr Leu Leu Tyr Ser  
 340  
 <210>984  
 <211>365  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>984  
 Ser Leu Leu Leu Ala Ile Phe Asn Val Asn Tyr Phe Met Asn Leu Cys  
 1 5 10 15  
 Lys Arg Ile Ser Phe Glu Glu Gly Leu Glu Leu Phe Val Ser Ser Pro  
 20 25 30  
 Ile Glu Arg Leu Gln Glu Arg Ala Asp Ala Ile Arg Lys Glu Arg Tyr  
 35 40 45  
 Pro Ser Asn Glu Val Thr Tyr Val Leu Asp Ala Asn Pro Asn Tyr Thr  
 50 55 60  
 Asn Ile Cys Lys Ile Asp Cys Thr Phe Cys Ala Phe Tyr Arg Lys Pro  
 65 70 75 80  
 Lys Ser Pro Asp Ala Tyr Leu Leu Ser Phe Asp Glu Val Arg Ser Leu  
 85 90 95  
 Leu Gln Arg Tyr Val Ser Ser Gly Val Lys Thr Val Leu Leu Gln Gly  
 100 105 110  
 Gly Val His Pro Gly Leu Gly Ile Asp Tyr Leu Glu Glu Leu Val Arg  
 115 120 125  
 Ile Thr Val Gln Glu Phe Pro Ser Ile His Pro His Phe Phe Ser Ala  
 130 135 140  
 Val Glu Ile Glu His Ala Cys Arg Val Ser Gly Ile Ser Ile Glu Gln  
 145 150 155 160  
 Gly Leu Gln Arg Leu Trp Asp Ala Gly Gln Arg Thr Ile Pro Gly Gly  
 165 170 175  
 Gly Ala Glu Ile Leu Ser Glu Arg Val Arg Lys Ile Ile Ser Pro Lys  
 180 185 190

Lys Met Gln Pro Gly Gly Trp Ile Asn Leu His Lys Leu Ala His Leu  
 195 200 205  
 Met Gly Phe Arg Thr Thr Ala Thr Met Met Phe Gly His Val Glu Asn  
 210 215 220  
 Pro Glu Asp Ile Leu Ile His Leu Gln Thr Leu Arg Asp Ala Gln Asp  
 225 230 235 240  
 Ser Cys Pro Gly Phe Tyr Ser Phe Ile Pro Trp Ser Tyr Lys Pro Gly  
 245 250 255  
 Asn Thr Ala Leu Arg Arg Asn Val Pro Gln Gln Ala Ser Ile Glu Thr  
 260 265 270  
 Tyr Tyr Arg Ile Leu Ala Leu Gly Arg Ile Phe Leu Asp Asn Phe Asp  
 275 280 285  
 His Val Ala Ala Ser Trp Phe Gly Glu Gly Lys Ser Leu Gly Ala Lys  
 290 295 300  
 Ala Leu His Tyr Gly Ala Asp Asp Phe Gly Gly Val Ile Leu Asp Glu  
 305 310 315 320  
 Ser Val His Lys Ala Thr Gly Trp Ser Ile Gln Ser Ser Gln Glu Glu  
 325 330 335  
 Ile Cys Asn Ile Ile Arg Ser Glu Gly Phe Ile Pro Val Glu Arg Asn  
 340 345 350  
 Thr Phe Tyr Gln His Ile Ser Cys Thr Val Ser Ser Leu  
 355 360 365  
 <210>985  
 <211>438  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>985  
 Val Val Ile Met Asp Asn Ser Asp Asn Ser Phe His Thr Leu Glu Thr  
 1 5 10 15  
 Glu Gln Gly Ser Phe Leu Asn Asp Glu Leu Ala Val Glu Glu Val Ala  
 20 25 30  
 Ser Thr Glu Ser Thr Glu Ile Ser Asp Ala Thr Leu Cys Phe Ala Asp  
 35 40 45  
 Glu Ile Gln Glu Leu Pro Ser Pro Glu Lys Lys Val Ala Phe Ile Leu  
 50 55 60  
 Asn Lys Met Arg Glu Ala Leu Thr Gly Ser Ser Gln Gly Ser Asp Leu  
 65 70 75 80  
 Arg Leu Phe Trp Asp Leu Arg Lys Glu Cys Leu Pro Leu Phe Asn Glu  
 85 90 95  
 Ile Glu Asp Thr Ala Lys Arg Ala Asp His Trp Arg Cys Tyr Ile Glu  
 100 105 110  
 Leu Thr Lys Glu Gly Arg His Leu Lys Gly Leu Gln Asp Glu Glu Gly  
 115 120 125  
 Ser Phe Val Val Gly Gln Ile Asp Leu Ala Ile Thr Cys Leu Glu Lys  
 130 135 140  
 Asp Ile Leu Lys Phe Gln Glu Gly Thr Glu Asp Lys Ile Phe Lys Asp  
 145 150 155 160  
 Arg Glu Asp Asn Phe Leu Glu Ser Gln Ala Leu Asp Lys His Gln Ala  
 165 170 175  
 Phe Tyr Lys Gln His His Thr Ser Leu Leu Trp Leu Ser Ser Phe Ser  
 180 185 190  
 Ser Lys Ile Ile Asp Leu Arg Lys Glu Leu Ile Asn Val Gly Met Arg  
 195 200 205  
 Met Arg Leu Lys Ser Lys Phe Phe Gln Arg Leu Ser Asn Leu Gly Asn  
 210 215 220  
 Gln Val Phe Pro Lys Arg Lys Glu Leu Ile Glu Lys Val Ser Gln Thr  
 225 230 235 240  
 Phe Ala Glu Asp Val Asp Ala Phe Val Ala Lys Tyr Phe Ile Gly Ser  
 245 250 255  
 Asp Lys Glu Thr Leu Lys Lys Thr Val Phe Phe Leu Arg Lys Glu Ile  
 260 265 270  
 Lys Asn Leu Gln His Ala Ala Lys Arg Leu Phe Val Ser Ser His Val  
 275 280 285  
 Phe Ala Glu Thr Arg Leu Lys Leu Ser Lys Cys Trp Asp Gln Leu Lys

290 295 300  
 Gly Met Glu Lys Glu Ile Arg Gln Glu Gly Arg Leu Arg Val Val  
 305 310 315 320  
 Ser Ala Glu Asn Ser Lys Gln Val Arg Gln Met Leu Ala Glu Val Ser  
 325 330 335  
 Ser Leu Leu Ile Glu Gly Asn Asp Leu Ser Lys Val Arg Lys Asp Leu  
 340 345 350  
 Glu Gly Ile Ser Lys Lys Ile Arg Ala Leu Asp Leu Thr His Asp Asp  
 355 360 365  
 Val Ile Ser Leu Lys Lys Glu Met Gln Gln Leu Phe Asp Gln Leu Arg  
 370 375 380  
 Glu Lys Gln Asp Ala Ala Glu His Ser Tyr Gln Glu Gln Leu Ala Lys  
 385 390 395 400  
 Asp Lys Gln Val Lys Lys Glu Ala Ala Arg Ser Leu Ala Glu Arg Ile  
 405 410 415  
 Thr Thr Phe Ser Lys Thr Cys Ser Glu Gly Thr Leu Leu Pro Asn Leu  
 420 425 430  
 Glu Lys Asn Gly Arg His  
 435

&lt;210&gt;986

&lt;211&gt;142

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;986

Ala His His Asn Ile Leu Lys Asn Leu Leu Arg Arg Asn Ile Thr Ser  
 1 5 10 15  
 Glu Ser Arg Glu Glu Trp Gln Thr Leu Lys Glu Leu Leu Gly Lys Met  
 20 25 30  
 Ser Phe Leu Pro Pro Pro Glu Lys Ile Ser Leu Asp Asn Gln Leu Asn  
 35 40 45  
 Leu Ala Leu Gln Thr Ile Val Asn Phe Phe Glu Glu Gln Leu Leu Ser  
 50 55 60  
 Ser Pro Asp Ser Arg Glu Lys Leu Val Asn Met Arg Gln Val Leu Lys  
 65 70 75 80  
 Gln Arg Arg Glu Arg Arg Gln Glu Leu Lys Asp Lys Leu Glu Gln Asp  
 85 90 95  
 Lys Lys Leu Leu Gly Ser Ser Gly Leu Asp Phe Asp Arg Ala Met Gln  
 100 105 110  
 Tyr Ser Ala Leu Val Glu Glu Asp Lys Arg Ala Leu Glu Glu Leu Asp  
 115 120 125  
 Ala Ser Ile Leu Glu Leu Lys Gln Gln Ile Gln Gln Leu Leu  
 130 135 140

&lt;210&gt;987

&lt;211&gt;119

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;987

Met Asp Ser Phe Cys Phe Asp Leu Leu Lys Val Ala Ala Lys Ala Ile  
 1 5 10 15  
 Asp Asp Lys Lys Gly Asn Asn Leu Val Val Leu Asp Val Arg Thr Ile  
 20 25 30  
 Ser Glu Phe Thr Asp Tyr Phe Val Phe Val Glu Gly Ser Val Asn Val  
 35 40 45  
 His Val Lys Ala Leu Ala Asn Thr Ile Val Glu Glu Leu Lys Lys Gln  
 50 55 60  
 Lys Val Ser Pro Leu His Val Glu Gly Ile Thr Asp Gly Asn Trp Val  
 65 70 75 80  
 Val Ile Asp Tyr Gly Phe Ile Val Val His Val Phe Val Ser Glu Ile  
 85 90 95  
 Arg Gly Lys Tyr Arg Leu Glu Glu Leu Trp Lys Asp Gly Phe Ile Val  
 100 105 110  
 Thr Ser Lys Leu Leu Ala Ser  
 115

&lt;210&gt;988

&lt;211&gt;424

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;988

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Leu Leu Asn Gly Val Arg Val Tyr Met Ser Lys Lys Arg Val Val Val
 1           5           10           15
Thr Gly Phe Gly Val Val Ser Cys Leu Gly Asn Glu Val Asp Thr Phe
          20           25           30
Tyr Asp Asn Leu Leu Ala Gly Val Ser Gly Val Arg Pro Ile Thr Ser
          35           40           45
Phe Pro Cys Glu Asp Tyr Ala Thr Arg Phe Ala Gly Trp Ile Pro Glu
          50           55           60
Phe Asn Pro Glu Pro Tyr Val Asp Lys Lys Gln Ala Arg Arg Val Asp
          65           70           75           80
Pro Phe Ile Thr Tyr Ala Met Val Ala Ala Lys Lys Ala Ile Ala Met
          85           90           95
Ser Arg Trp Asp Lys Asp His Leu Pro Ser Asp Pro Val Arg Cys Gly
          100          105          110
Val Ile Val Gly Ser Gly Met Gly Gly Leu Ser Thr Leu Asp Gln Gly
          115          120          125
Met Glu Arg Leu Leu Val Ile His Lys Lys Leu Ser Pro Phe Phe Ile
          130          135          140
Pro Tyr Ile Ile Thr Asn Met Ala Pro Ala Leu Ile Ala Met Asp Phe
          145          150          155          160
Gly Leu Met Gly Pro Asn Tyr Ser Ile Ser Thr Ala Cys Ala Thr Gly
          165          170          175
Asn Tyr Cys Ile Asp Ala Ala Tyr Gln His Leu Val Ser Gly Arg Ala
          180          185          190
Asp Met Ile Ile Cys Gly Gly Thr Glu Ala Ala Val Asn Arg Ile Gly
          195          200          205
Leu Glu Gly Phe Ile Ala Asn Arg Ala Leu Ser Glu Arg Asn Asp Ala
          210          215          220
Pro Asp Gln Ala Ser Arg Pro Trp Asp Arg Asp Arg Asp Gly Phe Val
          225          230          235          240
Leu Gly Glu Gly Ala Gly Ile Leu Val Leu Glu Thr Leu Glu Ser Ala
          245          250          255
Leu Arg Arg Asp Ala Pro Ile Phe Ala Glu Met Leu Gly Ser Tyr Val
          260          265          270
Thr Cys Asp Ala Phe His Ile Thr Ala Pro Arg Asp Asp Gly Glu Gly
          275          280          285
Ile Thr Ala Cys Val Leu Gly Ala Leu Asn Ser Ala Gly Ile Pro Lys
          290          295          300
Glu Arg Val Asn Tyr Val Asn Ala His Gly Thr Ser Thr Pro Leu Gly
          305          310          315          320
Asp Leu Ser Glu Val Leu Ala Val Lys Lys Ala Phe Gly Ser His Val
          325          330          335
Arg Asn Leu Arg Met Asn Ser Thr Lys Ser Leu Ile Gly His Cys Leu
          340          345          350
Gly Ala Ala Gly Gly Val Glu Ala Val Val Ala Ile Gln Ala Ile Leu
          355          360          365
Thr Gly Lys Leu His Pro Thr Ile Asn Leu Asp Asn Pro Ile Ala Glu
          370          375          380
Ile Glu Asp Phe Asp Val Val Ala Asn Lys Ala Gln Asp Trp Asp Ile
          385          390          395          400
Asp Val Ala Met Ser Asn Ser Phe Gly Phe Gly Gly His Asn Ser Thr
          405          410          415
Ile Leu Phe Ser Arg Tyr Val Pro
          420

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&lt;210&gt;989

&lt;211&gt;150

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;989

Met Met Lys Thr Lys Tyr Glu Tyr Ser Phe Gly Val Ile Pro Ile Lys



1 5 10 15  
 Phe Phe Gly Thr Pro Asp Lys Asn Thr Leu Lys Ala Cys Phe Ile Cys  
 20 25 30  
 His Thr Arg Gly Lys His Trp Gly Phe Pro Lys Gly His Ser Glu Asp  
 35 40 45  
 Lys Glu Gly Pro Gln Glu Ala Ala Glu Arg Glu Leu Val Glu Glu Thr  
 50 55 60  
 Gly Leu Ser Val Val Asn Phe Phe Pro Lys Val Leu Ile Glu Gln Tyr  
 65 70 75 80  
 Ser Phe Asn Asn Glu Glu Gln Val Phe Val Arg Lys Glu Val Thr Tyr  
 85 90 95  
 Phe Leu Ala Glu Val Arg Gly Asp Ile His Ala Asp Pro Met Glu Ile  
 100 105 110  
 Cys Asp Ser Gln Trp Leu Ser Leu Gln Glu Gly Leu Arg Leu Leu Ser  
 115 120 125  
 Phe Pro Glu Leu Arg Asp Leu Thr Val Glu Ala Asp Lys Phe Ile Asn  
 130 135 140  
 Asn Tyr Leu Phe Ser Ser  
 145 150

&lt;210&gt;990

&lt;311&gt;315

&lt;312&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;990

Met Ser Lys Lys Pro Leu Tyr Val Ala His Pro Trp His Ser Pro Thr  
 1 5 10 15  
 Leu Thr Gln Asp Asn Tyr Glu Ser Leu Cys Cys Tyr Ile Glu Ile Thr  
 20 25 30  
 Pro Tyr Asp Ser Val Lys Phe Glu Leu Asp Lys Ala Thr Gly Leu Leu  
 35 40 45  
 Lys Val Asp Arg Pro Gln Lys Phe Ser Asn Phe Cys Pro Cys Leu Tyr  
 50 55 60  
 Gly Leu Leu Pro Gln Thr Tyr Cys Gly Thr Ala Ser Gly Asn Tyr Ser  
 65 70 75 80  
 Gly Glu Gln Thr Arg Arg Glu Gly Ile Gln Gly Asp Lys Asp Pro Leu  
 85 90 95  
 Asp Val Cys Val Leu Thr Glu Lys Asn Ile His His Gly Asn Ile Leu  
 100 105 110  
 Leu Gln Ala Arg Pro Ile Gly Gly Leu Arg Ile Ile Asp Ser Gly Glu  
 115 120 125  
 Ala Asp Asp Lys Ile Ile Ala Val Leu Glu Asp Asp Leu Val Phe Ala  
 130 135 140  
 Glu Ile Glu Asp Ile Ser Asp Cys Pro Gly Thr Val Leu Asp Met Ile  
 145 150 155 160  
 Gln His Tyr Phe Leu Thr Tyr Lys Ala Thr Pro Asn His Leu Ile Lys  
 165 170 175  
 Gly Ser Pro Ala Lys Ile Glu Ile Val Gly Ile Tyr Gly Lys Lys Glu  
 180 185 190  
 Ala Gln Lys Val Ile Gln Leu Ala His Glu Asp Tyr Leu Ser Tyr Ile  
 195 200 205  
 Gly Asp Thr Ala Glu Val Asn  
 210 215

&lt;210&gt;991

&lt;211&gt;331

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;991

Met Lys Tyr Ser Leu Asn Phe Lys Glu Ile Lys Ile Asp Asp Tyr Glu  
 1 5 10 15  
 Arg Val Ile Glu Val Thr Cys Ser Lys Val Arg Leu His Ala Ile Ile  
 20 25 30  
 Ala Ile His Gln Thr Ala Val Gly Pro Ala Leu Gly Gly Val Arg Ala  
 35 40 45  
 Ser Leu Tyr Ser Ser Phe Glu Asp Ala Cys Thr Asp Ala Leu Arg Leu

|   |     |     |
|---|-----|-----|
| 50  | 55  | 60  |
| Ala Arg Gly Met Thr Tyr Lys Ala Ile Ile Ser Asn Thr Gly Thr Gly |     |     |
| 65  | 70  | 75  |
| Gly Gly Lys Ser Val Ile Ile Leu Pro Gln Asp Ala Pro Ser Leu Thr |     | 80  |
|   | 85  | 90  |
| Glu Asp Met Leu Arg Ala Phe Gly Gln Ala Val Asn Ala Leu Glu Gly |     | 95  |
|   | 100 | 105 |
| Thr Tyr Ile Cys Ala Glu Asp Leu Gly Val Ser Ile Asn Asp Ile Ser |     | 110 |
|   | 115 | 120 |
| Ile Val Ala Glu Glu Thr Pro Tyr Val Cys Gly Ile Ala Asp Val Ser |     | 125 |
|   | 130 | 135 |
| Gly Asp Pro Ser Ile Tyr Thr Ala His Gly Gly Phe Leu Cys Ile Lys |     | 140 |
| 145   | 150 | 155 |
| Glu Thr Ala Lys Tyr Leu Trp Gly Ser Ser Ser Leu Arg Gly Lys Lys |     | 160 |
|   | 165 | 170 |
| Ile Ala Ile Gln Gly Ile Gly Ser Val Gly Arg Arg Leu Leu Gln Ser |     | 175 |
|   | 180 | 185 |
| Leu Phe Phe Glu Gly Ala Glu Leu Tyr Val Ala Asp Val Leu Glu Arg |     | 190 |
|   | 195 | 200 |
| Ala Val Gln Asp Ala Ala Arg Leu Tyr Gly Ala Thr Ile Val Pro Thr |     | 205 |
|   | 210 | 215 |
| Glu Glu Ile His Ala Leu Glu Cys Asp Ile Phe Ser Pro Cys Ala Arg |     | 220 |
| 225   | 230 | 235 |
| Gly Asn Val Ile Arg Lys Asp Asn Leu Ala Asp Leu Asn Cys Lys Ala |     | 240 |
|   | 245 | 250 |
| Ile Val Gly Val Ala Asn Asn Gln Leu Glu Asp Ser Ser Ala Gly Met |     | 255 |
|   | 260 | 265 |
| Met Leu His Glu Arg Gly Ile Leu Tyr Gly Pro Asp Tyr Leu Val Asn |     | 270 |
|   | 275 | 280 |
| Ala Gly Gly Leu Leu Asn Val Ala Ala Ala Ile Glu Gly Arg Val Tyr |     | 285 |
|   | 290 | 295 |
| Ala Pro Lys Glu Val Leu Leu Lys Val Glu Glu Leu Pro Ile Val Leu |     | 300 |
| 305   | 310 | 315 |
| Ser Lys Leu Tyr Asn Gln Ser Lys Thr Thr Gly Lys Asp Leu Val Ala |     | 320 |
|   | 325 | 330 |
| Leu Ser Asp Ser Phe Val Glu Asp Lys Leu Leu Ala Tyr Thr Ser     |     | 335 |
|   | 340 | 345 |
|   |     | 350 |

&lt;210&gt;992

&lt;211&gt;325

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;992

|   |     |     |
|---|-----|-----|
| Met His Ser Glu Leu Pro Asn Tyr Gln Asn Ile Val Glu Ser Val Val |     |     |
| 1   | 5   | 10  |
| Thr Glu Ile Thr Thr Gln Leu Leu Asn Tyr Arg Ser Glu His Arg Leu |     | 15  |
|   | 20  | 25  |
| Val Pro Phe Trp Glu Lys Ser Asp Gly Ser Phe Ile Thr Ala Ala Asp |     | 30  |
|   | 35  | 40  |
| Tyr Gly Ser Gln Tyr Tyr Leu Lys Gln Gln Leu Ala Lys Ala Phe Pro |     | 45  |
| 50  | 55  | 60  |
| Asn Ile Pro Phe Ile Gly Glu Glu Thr Leu Tyr Pro Asp Gln Asp Asn |     | 65  |
|   | 70  | 75  |
| Glu Lys Ile Pro Glu Ile Leu Lys Phe Thr Arg Leu Leu Thr Ser Ser |     | 80  |
|   | 85  | 90  |
| Val Ser Arg Asp Asp Leu Ile Ser Thr Leu Val Pro Pro Pro Ser Pro |     | 95  |
|   | 100 | 105 |
| Thr Ser Leu Phe Trp Leu Val Asp Pro Ile Asp Gly Thr Ala Gly Phe |     | 110 |
|   | 115 | 120 |
| Ile Arg His Arg Ala Phe Ala Val Ala Ile Ser Leu Ile Tyr Glu Tyr |     | 125 |
|   | 130 | 135 |
| Arg Pro Ile Leu Ser Val Met Ala Cys Pro Ala Tyr Asn Gln Thr Phe |     | 140 |
| 145   | 150 | 155 |
| Lys Leu Tyr Ser Ala Ala Lys Gly His Gly Leu Ser Ile Val His Ser |     | 160 |
|   | 165 | 170 |
|   |     | 175 |

Gln Asn Leu Asp Arg Arg Phe Val Tyr Ala Asp Arg Lys Gln Thr Lys  
 180 185 190  
 Gln Phe Cys Glu Ala Ser Leu Ala Ala Leu Asn Gln Gln His His Ala  
 195 200 205  
 Thr Arg Lys Leu Ser Leu Gly Leu Pro Asn Thr Pro Ser Pro Arg Arg  
 210 215 220  
 Val Glu Ser Gln Tyr Lys Tyr Ala Leu Val Ala Glu Gly Ala Val Asp  
 225 230 235 240  
 Phe Phe Ile Arg Tyr Pro Phe Ile Asp Ser Pro Ala Arg Ala Trp Asp  
 245 250 255  
 His Val Pro Gly Ala Phe Leu Val Glu Glu Ala Gly Gly Arg Val Thr  
 260 265 270  
 Asp Ala Leu Gly Ala Pro Leu Glu Tyr Arg Lys Glu Ser Leu Val Leu  
 275 280 285  
 Asn Asn His Ala Val Ile Leu Ala Ser Gly Asp Gln Glu Thr His Glu  
 290 295 300  
 Thr Thr Leu Ala Ala Leu Gln Asn Gln Leu Asn Val Val Pro Thr Asp  
 305 310 315 320  
 Lys Leu Ile Ala Leu  
 325

&lt;210&gt;993

&lt;211&gt;246

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;993

Gly Glu Leu Met Leu Ile Lys Leu Trp Arg Ala Thr Tyr Glu Gly Met  
 1 5 10 15  
 Tyr Thr Phe Leu Val Gly Ala Leu Leu Lys Leu Arg Tyr Arg Met Gln  
 20 25 30  
 Val Glu Gly Trp Asp Thr Leu Asn Ile Asn Pro Lys Gln Gly Cys Leu  
 35 40 45  
 Phe Leu Ala Asn His Val Ala Glu Val Asp Pro Ile Ile Leu Glu Tyr  
 50 55 60  
 Leu Phe Trp Ser Arg Phe His Val Arg Pro Met Ala Val Glu Tyr Leu  
 65 70 75 80  
 Phe His Ser Arg Val Val Gln Trp Phe Leu Asn Ser Val Arg Ser Ile  
 85 90 95  
 Pro Ile Pro Gln Leu Val Pro Gly Lys Glu Ser Lys Arg Ser Leu Glu  
 100 105 110  
 Arg Met Asn Val Cys Tyr Glu Glu Ala Ser Arg Ala Leu Asn Arg Gly  
 115 120 125  
 Glu Ser Leu Leu Leu Tyr Pro Ser Gly Arg Leu Ser Arg Thr Gly Lys  
 130 135 140  
 Glu Glu Ile Val Asn Gln Tyr Ser Ala Tyr Val Leu Leu His Arg Val  
 145 150 155 160  
 Met Glu Cys Asn Val Val Leu Val Arg Val Ser Gly Leu Trp Gly Ser  
 165 170 175  
 Ala Phe Ser Arg Tyr Lys Gln Asn Ser Thr Pro Lys Leu Gly Pro Ala  
 180 185 190  
 Phe Lys Glu Ala Phe Arg Ala Leu Leu Arg Arg Gly Ile Phe Phe Met  
 195 200 205  
 Pro Lys Arg Phe Val Lys Ile Thr Leu Cys Gln Val Asp His Leu Phe  
 210 215 220  
 Leu Lys Gln Phe Pro Thr Lys Gln Asp Leu Asn Thr Phe Leu Ala Ser  
 225 230 235 240  
 Trp Phe Lys Ser Arg Arg  
 245

&lt;210&gt;994

&lt;211&gt;567

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;994

Ile Leu Phe Trp Leu Leu Gly Leu Asn Gln Gly Asp Asp Asn Leu Pro  
 1 5 10 15

Ile Glu Val Pro Leu Arg Ile Thr Arg Lys Leu Arg Arg Met His Asp  
 20 25 30  
 Gln Arg Asn Arg Gly His Asn Asn His Asn Leu Arg Leu Arg Pro Gly  
 35 40 45  
 Ser Thr Leu Leu Glu Ala Phe Leu Ile Leu Cys Ser Glu His Glu Glu  
 50 55 60  
 Gly Ile Ala Cys Phe Asp Glu His Leu Gly Ser Leu Ser Tyr Arg Glu  
 65 70 75 80  
 Leu Arg Asn Ala Ile Ile Ala Val Ala Ile Lys Val Ser Lys Phe Ser  
 85 90 95  
 Glu Asp Arg Val Gly Val Met Met Pro Ala Ser Ile Gly Ala Phe Ile  
 100 105 110  
 Ala Tyr Phe Gly Ile Leu Leu Ala Gly Lys Thr Pro Val Met Met Asn  
 115 120 125  
 Trp Ser Gln Gly Leu Arg Glu Leu Arg Ala Cys Thr Lys Thr Val Glu  
 130 135 140  
 Val Arg Arg Val Leu Thr Ser Gln Gln Phe Ile Lys His Leu Thr Glu  
 145 150 155 160  
 Val Gln Gly Phe Val Glu Tyr Pro Phe Asp Leu Met Tyr Met Glu Asp  
 165 170 175  
 Val Arg Lys Arg Leu Ser Trp Trp Glu Lys Cys Arg Ile Gly Leu Tyr  
 180 185 190  
 Ser Lys Cys Ser Val Pro Trp Leu Leu Arg Ile Phe Gly Val Ser Gly  
 195 200 205  
 Val Glu Ser Asp Asp Thr Ala Val Ile Leu Phe Thr Ser Gly Thr Glu  
 210 215 220  
 Lys Leu Pro Lys Ala Val Pro Leu Thr His Lys Asn Leu Met Glu Asn  
 225 230 235 240  
 Gln Glu Ala Cys Leu Lys Phe Phe Asp Pro Asn Thr Gln Asp Val Met  
 245 250 255  
 Leu Ala Phe Leu Pro Pro Phe His Ala Tyr Gly Phe Asn Ser Cys Gly  
 260 265 270  
 Leu Phe Pro Leu Leu Met Gly Val His Val Val Phe Ala Ser Asn Pro  
 275 280 285  
 Leu Asn Pro Lys Lys Leu Val Glu Phe Ile Asp Asp Lys Lys Val Thr  
 290 295 300  
 Phe Phe Gly Ser Thr Pro Val Phe Phe Asp Tyr Ile Leu Lys Thr Ala  
 305 310 315 320  
 Lys Lys Gln Asn Ser Cys Leu Glu Ser Leu Arg Leu Val Val Ile Gly  
 325 330 335  
 Gly Asp Ala Leu Lys Asp Thr Leu Tyr Glu Glu Thr Lys Lys Leu Gln  
 340 345 350  
 Pro Gln Ile Ala Leu Tyr Gln Gly Tyr Gly Ala Thr Glu Cys Ser Pro  
 355 360 365  
 Val Ile Ser Ile Thr Thr Lys Glu Ser Pro Arg Lys Ser Glu Cys Val  
 370 375 380  
 Gly Met Pro Ile Glu Gly Met Asp Val Leu Ile Ile Ser Lys Glu Thr  
 385 390 395 400  
 His Ile Pro Val Ser Ser Gly Glu Gln Gly Leu Ile Val Val Arg Gly  
 405 410 415  
 Asn Ser Val Phe Ser Gly Tyr Leu Gly Asn His Glu His Gln Ser Phe  
 420 425 430  
 Val Ser Leu Gly Gly Asp Gln Trp Tyr Leu Thr Gly Asp Leu Gly His  
 435 440 445  
 Ile Gly Pro Ser Gly Asp Leu Phe Leu Glu Gly Arg Leu Ser Arg Phe  
 450 455 460  
 Val Lys Ile Gly Gly Glu Met Val Ser Leu Glu Ala Leu Glu Ser Ile  
 465 470 475 480  
 Leu His Glu His Phe Thr Glu Asn Gln Asn Glu Asp Ala Gly Ser Leu  
 485 490 495  
 Val Val Cys Gly Ile Pro Gly Asp Lys Val Arg Leu Cys Leu Phe Thr  
 500 505 510  
 Thr Leu Ala Thr Thr Ile His Glu Val Asn Asp Ile Leu Lys Ser Ala  
 515 520 525

Glu Thr Ser Ser Ile Val Lys Ile Ser Tyr Val His Cln Val Glu Ser  
 530 535 540  
 Ile Pro Ile Leu Gly Ile Gly Lys Pro Asp Tyr Val Ser Leu Asn Ala  
 545 550 555 560  
 Leu Ala Val Ser Leu Phe Gly  
 565

&lt;210&gt;995

&lt;211&gt;376

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;995

Val Cys Lys Glu Ser Phe Leu Thr Thr Ser Asp Val Ile Asp Phe Val  
 1 5 10 15  
 Thr Asn Asp Phe Leu Gly Phe Ala Arg Ser Pro Thr Ile Tyr Cys Glu  
 20 25 30  
 Val Ser Lys Arg Phe Gln Ile His Cys Gln Gln Phe Pro His Glu Lys  
 35 40 45  
 Leu Gly Ile Arg Gly Ser Arg Leu Met Val Gly Pro Ser Ser Val Ile  
 50 55 60  
 Asp Asp Leu Glu Ser Lys Ile Ala Ser Tyr His Gly Ala Pro Asn Ala  
 65 70 75 80  
 Phe Ile Val Asn Ser Gly Tyr Met Ala Asn Leu Gly Leu Cys His His  
 85 90 95  
 Val Ser Arg Ser Thr Asp Val Leu Leu Trp Asp Glu Glu Val His Met  
 100 105 110  
 Ser Val Val His Ser Leu Ser Ala Ile Ser Gly Gln His His Thr Phe  
 115 120 125  
 His His Asn Asn Leu Glu His Leu Glu Ser Leu Leu Gln Cys Tyr Arg  
 130 135 140  
 Ile Ser Ser Lys Gly Arg Ile Phe Ile Phe Val Ser Ser Val Tyr Ser  
 145 150 155 160  
 Phe Arg Gly Thr Leu Ala Pro Leu Glu Gln Ile Ile Ala Leu Ser Lys  
 165 170 175  
 Lys Tyr His Ala His Leu Ile Val Asp Glu Ala His Ala Met Gly Ile  
 180 185 190  
 Phe Gly Asp Asp Gly Lys Gly Leu Cys His Ala Leu Gly Tyr Glu Asn  
 195 200 205  
 Phe Tyr Ala Val Leu Val Thr Tyr Gly Lys Ala Leu Gly Thr Met Gly  
 210 215 220  
 Ala Ser Leu Leu Thr Ser Ser Glu Val Lys Tyr Asp Leu Met Gln Asn  
 225 230 235 240  
 Ser Pro Pro Leu Arg Tyr Ser Thr Ser Leu Ser Pro His Thr Leu Ile  
 245 250 255  
 Ser Ile Gly Thr Ala Tyr Asp Phe Leu Ala Ser Glu Gly Glu Ile Ala  
 260 265 270  
 Arg Lys Gln Val Phe Lys Leu Lys Glu His Phe His Glu Cys Phe Asp  
 275 280 285  
 Ser His Ala Pro Gly Cys Val Gln Pro Ile Phe Leu Pro His Thr Cys  
 290 295 300  
 Leu Glu Glu Ala Ile Ser Val Leu Glu Thr Thr Gly Ile His Val Gly  
 305 310 315 320  
 Val Val Ala Phe Ala Lys His Pro Phe Leu Arg Val Asn Leu His Ala  
 325 330 335  
 Tyr Asn Thr Val Asp Glu Val Asn Leu Leu Ala Gln Val Met Lys Pro  
 340 345 350  
 Tyr Leu Glu Lys Ser Ser His Arg Val His Ile Asn His Glu Phe His  
 355 360 365  
 Leu Trp Arg Glu Leu Cys Gln His  
 370 375

&lt;210&gt;996

&lt;211&gt;758

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;996

Lys Arg Ph Thr Ala Lys Thr Lys Ser Met Gly Tyr Ile Glu Ser Ser  
 1 5 10 15  
 Thr Phe Arg Leu Tyr Ala Glu Val Ile Val Gly Ser Asn Ile Asn Lys  
 20 25 30  
 Val Leu Asp Tyr Gly Val Pro Glu Asn Leu Glu His Ile Thr Lys Gly  
 35 40 45  
 Thr Ala Val Thr Ile Ser Leu Arg Gly Gly Lys Lys Val Gly Val Ile  
 50 55 60  
 Tyr Gln Ile Lys Thr Thr Thr Gln Cys Lys Lys Ile Leu Pro Ile Leu  
 65 70 75 80  
 Gly Leu Ser Asp Ser Glu Ile Val Leu Pro Gln Asp Leu Leu Asp Leu  
 85 90 95  
 Leu Phe Trp Ile Ser Gln Tyr Tyr Phe Ala Pro Leu Gly Lys Thr Leu  
 100 105 110  
 Lys Leu Phe Leu Pro Ala Ile Ser Ser Asn Val Ile Gln Pro Lys Gln  
 115 120 125  
 His Tyr Arg Val Val Leu Lys Gln Ser Lys Ala Lys Thr Lys Glu Ile  
 130 135 140  
 Leu Ala Lys Leu Glu Val Leu His Pro Ser Gln Gly Ala Val Leu Lys  
 145 150 155 160  
 Ile Leu Leu Gln His Ala Ser Pro Pro Gly Leu Ser Ser Leu Met Glu  
 165 170 175  
 Thr Ala Lys Val Ser Gln Ser Pro Ile His Ser Leu Glu Lys Leu Gly  
 180 185 190  
 Ile Leu Asp Ile Val Asp Ala Ala Gln Leu Glu Leu Gln Glu Asp Leu  
 195 200 205  
 Leu Thr Phe Phe Pro Pro Ala Pro Lys Asp Leu His Pro Glu Gln Gln  
 210 215 220  
 Ser Ala Ile Asp Lys Ile Phe Ser Ser Leu Lys Thr Ser Gln Phe His  
 225 230 235 240  
 Thr His Leu Leu Phe Gly Ile Thr Gly Ser Gly Lys Thr Glu Ile Tyr  
 245 250 255  
 Leu Arg Ala Thr Ser Glu Ala Leu Lys Gln Gly Lys Ser Thr Ile Leu  
 260 265 270  
 Leu Val Pro Glu Ile Ala Leu Thr Val Gln Thr Val Ser Leu Phe Lys  
 275 280 285  
 Ala Arg Phe Gly Lys Asp Val Gly Val Leu His His Lys Leu Ser Asp  
 290 295 300  
 Ser Asp Gln Lys Ser His Val Ala Pro Ser Phe Arg Arg Ser Leu Arg  
 305 310 315 320  
 Ile Leu Ile Gly Pro Arg Ser Ala Leu Phe Cys Pro Met Lys Asn Leu  
 325 330 335  
 Gly Leu Ile Ile Val Asp Glu Glu His Asp Pro Ala Tyr Lys Gln Thr  
 340 345 350  
 Glu Ser Pro Pro Cys Tyr His Ala Arg Asp Val Ala Val Met Arg Gly  
 355 360 365  
 Lys Leu Ala His Ala Thr Val Val Leu Gly Ser Ala Thr Pro Ser Leu  
 370 375 380  
 Glu Ser Tyr Thr Asn Ala Leu Ser Gly Lys Tyr Val Leu Ser Arg Leu  
 385 390 395 400  
 Ser Ser Arg Ala Ala Ala Ala His Pro Ala Lys Ile Ser Leu Ile Asn  
 405 410 415  
 Met Asn Leu Glu Arg Glu Lys Ser Lys Thr Lys Ile Leu Phe Ser Gln  
 420 425 430  
 Pro Val Leu Lys Lys Ile Ala Glu Arg Leu Glu Val Gly Glu Gln Val  
 435 440 445  
 Leu Ile Phe Phe Asn Arg Arg Gly Tyr His Thr Asn Val Ser Cys Thr  
 450 455 460  
 Val Cys Lys His Thr Leu Lys Cys Pro His Cys Asp Met Val Leu Thr  
 465 470 475 480  
 Phe His Lys Tyr Ala Asn Val Leu Leu Cys His Leu Cys Asn Ser Ser  
 485 490 495  
 Pro Lys Asp Leu Pro Gln Ser Cys Pro Lys Cys Leu Gly Thr Met Thr  
 500 505 510

Leu Gln Tyr Arg Gly Ser Gly Thr Glu Lys Ile Glu Lys Ile Leu Gln  
 515 520 525  
 Gln Ile Phe Pro Gln Ile Arg Thr Ile Arg Ile Asp Ser Asp Thr Thr  
 530 535 540  
 Lys Phe Lys Gly Ser His Glu Thr Leu Leu Arg Gln Phe Ala Thr Gly  
 545 550 555 560  
 Lys Ala Asp Val Leu Ile Gly Thr Gln Met Ile Ala Lys Gly Met Asn  
 565 570 575  
 Phe Ser Ala Val Thr Leu Ala Val Ile Leu Asn Gly Asp Ser Gly Leu  
 580 585 590  
 Tyr Ile Pro Asp Phe Arg Ala Ser Glu Gln Val Phe Gln Leu Ile Thr  
 595 600 605  
 Gln Val Ala Gly Arg Ser Gly Arg Ser His Leu Pro Gly Glu Ile Leu  
 610 615 620  
 Ile Gln Ser Phe Leu Pro Asp His Pro Thr Ile His Ser Ala Met Arg  
 625 630 635 640  
 Gln Asp Tyr Ser Ala Phe Tyr Ser Gln Glu Ile Thr Gly Arg Glu Leu  
 645 650 655  
 Cys Glu Tyr Pro Pro Phe Ile Arg Leu Ile Arg Cys Ile Phe Met Gly  
 660 665 670  
 Lys Cys Pro Lys Gln Thr Trp Glu Glu Ala His Arg Val His Asn Ile  
 675 680 685  
 Leu Lys Glu Gln Leu Glu Ser Thr Asn Pro Leu Met Pro Val Thr Pro  
 690 695 700  
 Cys Gly His Phe Lys Ile Lys Asp Thr Phe Arg Tyr Gln Phe Leu Ile  
 705 710 715 720  
 Lys Ser Ala Tyr Val Ile Pro Val Asn Lys Lys Leu His His Ala Leu  
 725 730 735  
 Met Leu Ala Lys Leu Ser Pro Lys Val Lys Phe Met Ile Asp Val Asp  
 740 745 750  
 Pro Met Thr Thr Phe Phe  
 755

&lt;210&gt;997

&lt;211&gt;230

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;997

Lys His Trp Leu Phe Met Glu Asn Ser Gln Asn Phe His Asp Thr Leu  
 1 5 10 15  
 Cys Gln Leu Leu Asp Arg Tyr Ser Glu Glu Leu Tyr Pro Thr Leu Ala  
 20 25 30  
 Ser Leu Leu Asn Val Thr Leu Pro Asn Thr Ala Ile Ser Ala Ser Val  
 35 40 45  
 Ser Ser Ile Pro Glu Lys Ala Val Glu Val Pro Asn Ala Glu Pro Gln  
 50 55 60  
 Pro Ile Thr Pro Pro Pro Thr Asn Leu Ser Gln Glu Lys Thr Lys  
 65 70 75 80  
 Pro Ser Asp Trp Lys Cys Val Pro Leu His Pro Asp Leu Ser Gln Asn  
 85 90 95  
 Ala Ile Leu Lys Glu Lys Tyr Pro Ala Leu Lys Asp Cys Ser Leu Pro  
 100 105 110  
 Ala Pro Lys Ile Pro Cys Ser Ile Phe Val Tyr Glu Glu Asn Asn Glu  
 115 120 125  
 Glu Val Leu Phe Phe Asn Arg Leu Ala Lys Ile Leu Thr Gln Gln Leu  
 130 135 140  
 Phe Pro Thr Lys Leu Thr Leu Ile His Ala Lys Thr Asn Ile Phe Val  
 145 150 155 160  
 Asn Asn Pro Asn Phe Phe Leu Ala Leu Ala Pro Leu Asn Val Ile Arg  
 165 170 175  
 Tyr Lys Ile Pro Thr Thr Asp Tyr His Gln Ser Leu Thr Gln Asn Gly  
 180 185 190  
 Cys Ile Phe Leu Pro Leu Tyr Ser Ser Leu Glu Tyr Glu Lys Asp Ser  
 195 200 205  
 Gln Leu Lys Arg Asn Leu Trp Ala Ile Leu Asn Arg Leu Pro Phe Ala

210 215 220  
 Tyr Thr Pro Lys Ser Ser  
 225 230  
 <210>998  
 <211>166  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>996  
 His Glu Ile Leu Val Ala Arg Met Cys Phe Cys Arg Leu Ser Ala Ile  
 1 5 10 15  
 Asp Phe Thr Leu Leu Cys Cys Thr Lys Thr Cys Phe Trp Arg Asn Leu  
 20 25 30  
 Gln Gln Thr Arg Pro Ile Ala Ala Asn Leu Gln Trp Glu Ser Tyr  
 35 40 45  
 Ala Glu Ala Leu Glu His Ser Lys Gln Asp His Lys Pro Ile Cys Leu  
 50 55 60  
 Phe Phe Thr Gly Ser Asp Trp Cys Met Trp Cys Ile Lys Met Gln Asp  
 65 70 75 80  
 Gln Ile Leu Gln Ser Ser Glu Phe Lys His Phe Ala Gly Val His Leu  
 85 90 95  
 His Met Val Glu Val Asp Phe Pro Gln Lys Asn His Gln Pro Glu Glu  
 100 105 110  
 Gln Arg Gln Lys Asn Gln Glu Leu Lys Ala Gln Tyr Lys Val Thr Gly  
 115 120 125  
 Phe Pro Glu Leu Val Phe Ile Asp Ala Glu Gly Lys Gln Leu Ala Arg  
 130 135 140  
 Met Gly Phe Glu Pro Gly Gly Gly Ala Ala Tyr Val Ser Lys Val Lys  
 145 150 155 160  
 Ser Ala Leu Lys Leu Arg  
 165  
 <210>999  
 <211>980  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>999  
 Met Ile Pro Ser Pro Thr Pro Ile Asn Phe Arg Asp Asp Thr Ile Leu  
 1 5 10 15  
 Glu Thr Asp Pro Lys Pro Ser Leu Ile Met Phe Ser Ser Lys Lys Thr  
 20 25 30  
 Glu Ile Ala Ser Glu Arg Arg Lys Ala His Pro Thr Leu Phe Lys Val  
 35 40 45  
 Leu Gly Thr Ile Trp Asn Ile Val Lys Phe Ile Ile Ser Ile Ile Leu  
 50 55 60  
 Phe Leu Pro Leu Ala Leu Leu Trp Val Leu Lys Lys Thr Cys Gln Phe  
 65 70 75 80  
 Phe Ile Leu Pro Ser Ser Ile Ile Ser Gln Ser Met Ser Lys Thr Ala  
 85 90 95  
 Val Ala Ile Arg Arg Met Thr Phe Leu Ser His Ile Lys Gln Leu Leu  
 100 105 110  
 Ser Leu Lys Glu Ile Ser Ala Ala Asp Arg Val Val Ile Gln Tyr Asp  
 115 120 125  
 Asp Leu Val Val Asp Ser Leu Ala Ile Lys Ile Pro His Ala Leu Pro  
 130 135 140  
 His Arg Trp Ile Leu Tyr Ser Gln Gly Asn Ser Gly Leu Met Glu Asn  
 145 150 155 160  
 Leu Phe Asp Arg Gly Asp Ser Ser Leu His Gln Leu Ala Lys Ala Thr  
 165 170 175  
 Gly Ser Asn Leu Leu Val Phe Asn Tyr Pro Gly Ile Met Ser Ser Lys  
 180 185 190  
 Gly Glu Ala Lys Arg Glu Asn Leu Val Lys Ser Tyr Gln Ala Cys Val  
 195 200 205  
 Arg Tyr Leu Arg Asp Glu Glu Thr Gly Pro Lys Ala Asn Gln Ile Ile  
 210 215 220  
 Ala Phe Gly Tyr Ser Leu Gly Thr Ser Val Gln Ala Ala Ala Leu Asp



225 230 235 240  
 Arg Glu Val Thr Asp Gly Ser Asp Gly Thr Ser Trp Ile Val Val Lys  
 245 250 255  
 Asp Arg Gly Pro Arg Ser Leu Ala Asp Val Ala Asn Gln Ile Cys Lys  
 260 265 270  
 Pro Ile Ala Ser Ala Ile Ile Lys Leu Val Gly Trp Asn Ile Asp Ser  
 275 280 285  
 Val Lys Pro Ser Glu Arg Leu Arg Cys Pro Glu Ile Phe Ile Tyr Asn  
 290 295 300  
 Ser Asn His Asp Gln Glu Leu Ile Ser Asp Gly Leu Phe Glu Arg Glu  
 305 310 315 320  
 Asn Cys Val Xaa Thr Pro Phe Leu Glu Leu Pro Glu Val Lys Thr Ser  
 325 330 335  
 Gly Thr Lys Ile Pro Ile Pro Glu Arg Asp Leu Leu His Leu Asn Pro  
 340 345 350  
 Leu Ser Pro Asn Val Val Asp Arg Leu Ala Ala Val Ile Ser Asn Tyr  
 355 360 365  
 Leu Asp Ser Glu Asn Arg Lys Ser Gln Gln Pro Asp  
 370 375 380  
 <210>1000  
 <211>377  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1000  
 Phe Thr Leu Leu Asn Leu Ser Asn Arg Ser Asp Ile Leu Ser Gly Ile  
 1 5 10 15  
 Phe Ser Asn Pro His Pro Val Ser Tyr Phe Ser Ser Thr His Ala Lys  
 20 25 30  
 Gln Leu Ser Asp Phe Ser Lys Lys His Pro Ile Leu Thr Lys Ile Val  
 35 40 45  
 Thr Ile Ile Val Lys Ile Phe Lys Leu Leu Ile Gly Leu Ile Ile Pro  
 50 55 60  
 Pro Leu Gly Ile Tyr Trp Leu Cys Gln Leu Val Cys Ser Leu Ala Leu  
 65 70 75 80  
 Phe Pro Arg Ser Ser Met Leu Tyr Ser Val Leu Lys Thr Cys Phe Lys  
 85 90 95  
 Lys Tyr Arg Leu Glu Gln Glu Ile Gln Asp Tyr Phe Val Lys Asn Leu  
 100 105 110  
 Asp Pro Ser Phe Lys Asp Pro Ala Val Ser Glu Ser Lys Arg Ile Thr  
 115 120 125  
 Ile Gln Gln Asp His Leu Thr Ile Asp Thr Leu Ala Ile His Phe Ser  
 130 135 140  
 Thr Ala Arg Pro Lys Arg Trp Leu Leu Ile Ser Leu Gly Ser Gly Asp  
 145 150 155 160  
 Phe Leu Glu Asp Met Ile Gly Leu Lys Asp Ser Leu Phe Leu Ser Trp  
 165 170 175  
 Lys Glu Leu Ala Lys Leu Leu Gly Ala Asn Ile Leu Ile Tyr Asn Tyr  
 180 185 190  
 Pro Gly Val Lys Ser Ser Thr Gly Lys Leu Asn Leu Glu Asn Leu Ala  
 195 200 205  
 Thr Val Ile Ile Tyr Val Gln Ser Thr Tyr Lys Ile Lys Phe Arg Ala  
 210 215 220  
 Leu Gly Leu Thr Lys Ser Ser Pro Arg Ile Phe Leu Arg Arg Gly Ser  
 225 230 235 240  
 Pro Val Cys Ser Phe Ala Lys Asn Pro Phe Thr Asn Ser Glu Thr Ser  
 245 250 255  
 Trp Val Ala Val Lys Asp Arg Ala Pro His Ser Leu Pro Ala Ala Ala  
 260 265 270  
 Asn Ser Phe Phe Gly Pro Ile Gly Lys Leu Ile Ala Val Leu Ala Arg  
 275 280 285  
 Trp Lys Met Asp Ala Glu Lys Asn Ser Arg Glu Leu Pro Cys Pro Glu  
 290 295 300  
 Ile Leu Val Tyr Ser Ala Asp Arg Phe Arg Pro Ser Glu Val Gly Asp  
 305 310 315 320

Asp Thr Ala Leu Leu Pro Glu Phe Thr Leu Ala His Ala Ile Lys Arg  
 335 330 335  
 Thr Pro Phe Ala Arg Ser Lys Lys Phe Ile Gly Glu Val Asn Leu Leu  
 340 345 350  
 His Ser Ser Pro Leu Lys His Pro Thr Ile Gln Lys Leu Ala Glu Ala  
 355 360 365  
 Ile Leu Glu Ser Leu Ser Arg Lys Asn  
 370 375  
 <210>1001  
 <211>369  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1001  
 Met Ala Pro Ile His Gly Ser Asn Ala Phe Val Glu Asp Ile Leu His  
 1 5 10 15  
 Ser His Pro Ser Pro Gln Ala Thr Tyr Phe Ser Ser Thr Arg Ala Gln  
 20 25 30  
 Lys Leu His Glu Phe Lys Asp Arg His Pro Val Leu Thr Arg Ile Ala  
 35 40 45  
 Ser Val Ile Ile Lys Ile Phe Lys Val Leu Ile Gly Leu Ile Ile Leu  
 50 55 60  
 Pro Leu Gly Ile Tyr Trp Leu Cys Gln Thr Leu Cys Thr Asn Ser Ile  
 65 70 75 80  
 Leu Pro Ser Lys Asn Leu Leu Lys Ile Phe Lys Lys Gln Pro Asn Thr  
 85 90 95  
 Lys Thr Leu Lys Thr Asn Tyr Leu Arg Ala Leu Gln Asp Tyr Ser Ser  
 100 105 110  
 Lys Asn Arg Val Ala Ser Met Arg Arg Val Pro Ile Leu Gln Asp Asn  
 115 120 125  
 Val Leu Ile Asp Thr Leu Glu Ile Cys Leu Ser Gln Ala Pro Thr Asn  
 130 135 140  
 Arg Trp Met Leu Ile Ser Leu Gly Ser Asp Cys Ser Leu Glu Glu Ile  
 145 150 155 160  
 Ala Cys Lys Glu Ile Phe Asp Ser Trp Gln Arg Phe Ala Lys Leu Ile  
 165 170 175  
 Gly Ala Asn Ile Leu Val Tyr Asn Tyr Pro Gly Val Met Ser Ser Thr  
 180 185 190  
 Gly Ser Ser Ser Leu Lys Asp Leu Ala Ser Ala His Asn Ile Cys Thr  
 195 200 205  
 Arg Tyr Leu Lys Asp Lys Glu Gln Gly Pro Gly Ala Lys Glu Ile Ile  
 210 215 220  
 Thr Tyr Gly Tyr Ser Leu Gly Gly Leu Ile Gln Ala Glu Ala Leu Arg  
 225 230 235 240  
 Asp Gln Lys Ile Val Ala Asn Asp Asp Thr Thr Trp Ile Ala Val Lys  
 245 250 255  
 Asp Arg Cys Pro Leu Phe Ile Ser Pro Glu Gly Phe His Ser Cys Arg  
 260 265 270  
 Arg Ile Gly Lys Leu Val Ala Arg Leu Phe Gly Trp Gly Thr Lys Ala  
 275 280 285  
 Val Glu Arg Ser Gln Asp Leu Pro Cys Leu Glu Ile Phe Leu Tyr Pro  
 290 295 300  
 Thr Asp Ser Leu Arg Arg Ser Thr Val Arg Gln Asn Lys Leu Leu Ala  
 305 310 315 320  
 Pro Glu Leu Thr Leu Ala His Ala Ile Lys Asn Ser Pro Tyr Val Gln  
 325 330 335  
 Asn Lys Glu Phe Ile Glu Val Arg Leu Ser Ser Asp Ile Asp Pro Ile  
 340 345 350  
 Asp Ser Lys Thr Arg Val Ala Leu Ala Thr Pro Ile Leu Lys Lys Leu  
 355 360 365  
 Ser

<210>1002  
 <211>160  
 <212>PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1002

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Asn Lys Met Ser Glu Leu Ala Pro Cys Ser Thr Gly Leu Gln Met Val
 1          5          10          15
Pro His Thr Gln Val His His Ala Leu Asp Thr Arg Arg Val Ile Leu
          20          25          30
Thr Ile Ala Ala Cys Leu Ser Leu Ile Ala Gly Ile Val Leu Val Gly
          35          40          45
Leu Gly Ala Ala Ala Ile Leu Pro Ser Leu Phe Gly Val Ile Gly Gly
          50          55          60
Met Ile Leu Ile Leu Phe Ser Ser Ile Ala Leu Ile Tyr Leu Tyr Lys
          65          70          75          80
Lys Thr Arg Glu Val Asp Gln Ile Ala Leu Gln Pro Leu Pro Gln Met
          85          90          95
Ile Ser Lys Asp Gln Ser Ile Ile Asp Phe Val Lys Thr Arg Asp Tyr
          100          105          110
Ala Ser Leu Gln Lys Lys Ala Thr Phe Ala Tyr Thr His Thr His Tyr
          115          120          125
Tyr Asp Gly Ser Met Val Phe Tyr Arg Glu Ile Pro Arg Phe Met Leu
          130          135          140
Gly Ser Tyr Leu Ala Leu Arg Lys Asp Met Asp Arg Gln Ala Leu Phe
145          150          155          160

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&lt;210&gt;1003

&lt;211&gt;542

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1003

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Leu Gly Trp Lys Ser Asp Ile Tyr Thr Asn Ile Leu Glu Glu Arg Met
 1          5          10          15
Thr Ala Arg Ala Glu Tyr Leu Asp His Glu Asp Phe Leu Tyr Arg Ser
          20          25          30
His Lys Leu Gln Glu Leu Ser Glu Leu Gly Val Val Leu Tyr Pro Tyr
          35          40          45
Glu Phe Pro Gly Val Phe Ser Cys Glu Asp Ile Lys Lys Thr Phe Ala
          50          55          60
Ser Gln Glu Leu Gly Asn Ser Glu Ala Ala Met Ser Arg Ser Thr Pro
          65          70          75          80
Arg Val Arg Phe Ala Gly Arg Leu Val Leu Phe Arg Ala Met Gly Lys
          85          90          95
Asn Ala Phe Gly Gln Ile Leu Asp His Asn Gln Thr Ile Gln Val Met
          100          105          110
Phe Asn Arg Glu Phe Thr Ser Val His Gly Leu Ser Glu Asp Ala Glu
          115          120          125
Ile Thr Pro Ile Lys Phe Ile Glu Lys Lys Leu Asp Leu Gly Asp Ile
          130          135          140
Leu Gly Ile Asp Gly Tyr Leu Phe Phe Thr His Ser Gly Glu Leu Thr
145          150          155          160
Val Leu Val Glu Thr Val Thr Leu Leu Cys Lys Ser Leu Leu Ser Leu
          165          170          175
Pro Asp Lys His Ala Gly Leu Ser Asp Lys Glu Val Arg Tyr Arg Lys
          180          185          190
Arg Trp Leu Asp Leu Ile Ser Ser Arg Glu Val Ser Asp Thr Phe Val
          195          200          205
Lys Arg Ser Tyr Ile Ile Lys Leu Ile Arg Asn Tyr Met Asp Ala His
          210          215          220
Gly Phe Leu Glu Val Glu Thr Pro Ile Leu Gln Asn Ile Tyr Gly Gly
225          230          235          240
Ala Glu Ala Lys Pro Phe Thr Thr Thr Met Glu Ala Leu His Ser Glu
          245          250          255
Met Phe Leu Arg Ile Ser Leu Glu Ile Ala Leu Lys Lys Ile Leu Val
          260          265          270
Gly Gly Ala Pro Arg Ile Tyr Glu Leu Gly Lys Val Phe Arg Asn Glu
          275          280          285
Gly Ile Asp Arg Thr His Asn Pro Glu Phe Thr Met Ile Glu Ala Tyr

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290 295 300  
 Ala Ala Tyr Met Asp Tyr Lys Glu Val Met Val Phe Val Glu Asn Leu  
 305 310 315 320  
 Val Glu His Leu Val Arg Ala Val Asn His Asp Asn Thr Ser Leu Val  
 325 330 335  
 Tyr Ser Tyr Trp Lys His Gly Pro Gln Glu Val Asp Phe Lys Ala Pro  
 340 345 350  
 Trp Ile Arg Met Thr Met Lys Glu Ser Ile Ala Thr Tyr Ala Gly Ile  
 355 360 365  
 Asp Val Asp Val His Ser Asp Gln Lys Leu Lys Glu Ile Leu Lys Lys  
 370 375 380  
 Lys Thr Thr Phe Pro Glu Thr Ala Phe Ala Thr Ala Ser Arg Gly Met  
 385 390 395 400  
 Leu Ile Ala Ala Leu Phe Asp Glu Leu Val Ser Asp Asn Leu Ile Ala  
 405 410 415  
 Pro His His Ile Thr Asp His Pro Val Glu Thr Thr Pro Leu Cys Lys  
 420 425 430  
 Thr Leu Arg Ser Gly Asp Thr Ala Phe Val Glu Arg Phe Glu Ser Phe  
 435 440 445  
 Cys Leu Gly Lys Glu Leu Cys Asn Ala Tyr Ser Glu Leu Asn Asp Pro  
 450 455 460  
 Ile Arg Gln Arg Glu Leu Leu Gln Gln Gln His Thr Lys Lys Glu Leu  
 465 470 475 480  
 Leu Pro Asp Ser Glu Cys His Pro Ile Asp Glu Glu Phe Leu Glu Ala  
 485 490 495  
 Leu Cys Gln Gly Met Pro Pro Ala Gly Gly Phe Gly Ile Gly Val Asp  
 500 505 510  
 Arg Leu Val Met Ile Leu Thr Asn Ala Ala Ser Ile Arg Asp Val Leu  
 515 520 525  
 Tyr Phe Pro Val Met Arg Arg Phe Asp Ala Glu Lys Thr Asn  
 530 535 540  
 <210>1004  
 <211>308  
 <213>PRT  
 <213>Chlamydia pneumoniae  
 <400>1004  
 Val Ala Tyr Ala Ala Ala Pro Glu Phe Leu Leu Met Ser Met Thr Lys  
 1 5 10 15  
 Lys Thr Gln Val Ile Leu Tyr Cys Gly Lys His Thr Ile Gln Asn Val  
 20 25 30  
 Met Ala Ser Phe Ile Gly Lys Val Leu Ser Gly Ile Gly Arg Pro Gly  
 35 40 45  
 Trp His Leu Glu Cys Ser Ile Met Ala Met Glu Leu Leu Gly Asp Ser  
 50 55 60  
 Leu Asp Ile His Ala Gly Gly Val Asp Asn Ile Phe Pro His His Glu  
 65 70 75 80  
 Asn Glu Ile Ala Gln Ser Glu Ala Leu Ser Gly Lys Pro Phe Ala Arg  
 85 90 95  
 Tyr Trp Leu His Ser Glu His Leu Leu Ile Asp Gly Lys Lys Met Ser  
 100 105 110  
 Lys Ser Leu Gly Asn Phe Leu Thr Leu Arg Asp Leu Leu His Gln Glu  
 115 120 125  
 Phe Thr Gly Gln Glu Val Arg Tyr Met Leu Leu Gln Ser His Tyr Arg  
 130 135 140  
 Thr Gln Leu Asn Phe Thr Glu Glu Ala Leu Leu Ala Cys Arg His Ala  
 145 150 155 160  
 Leu Arg Arg Leu Lys Asp Phe Val Ser Arg Leu Glu Gly Val Asp Leu  
 165 170 175  
 Pro Gly Glu Ser Pro Leu Pro Arg Thr Leu Asp Ser Ser Ser Gln Phe  
 180 185 190  
 Ile Glu Ala Phe Ser Arg Ala Leu Ala Asn Asp Leu Asn Val Ser Thr  
 195 200 205  
 Gly Phe Ala Ser Leu Phe Asp Phe Val His Glu Ile Asn Thr Leu Ile  
 210 215 220

Asp Gln Gly His Phe Ser Lys Ala Asp Ser Leu Tyr Ile Leu Asp Thr  
 225 230 235 240  
 Leu Lys Lys Val Asp Thr Val Leu Gly Val Leu Pro Leu Thr Thr Ser  
 245 250 255  
 Val Cys Ile Pro Glu Thr Val Met Gln Leu Val Ala Glu Arg Glu Glu  
 260 265 270  
 Ala Arg Lys Thr Lys Asn Trp Ala Met Ala Asp Thr Leu Arg Asp Glu  
 275 280 285  
 Ile Leu Ala Ala Gly Phe Leu Val Glu Asp Ser Lys Ser Gly Pro Lys  
 290 295 300  
 Val Lys Pro Leu  
 305

&lt;210&gt;1005

&lt;211&gt;232

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1005

Gly Leu Tyr Phe Tyr Asn Thr Ala Ser Gln Lys Lys Glu Leu Phe Phe  
 1 5 10 15  
 Pro Asn His Thr Pro Val Arg Leu Tyr Thr Cys Gly Pro Thr Val Tyr  
 20 25 30  
 Asp Tyr Ala His Ile Gly Asn Phe Arg Thr Tyr Val Phe Glu Asp Ile  
 35 40 45  
 Leu Lys Arg Thr Leu Val Phe Phe Gly Tyr Ser Val Thr His Val Met  
 50 55 60  
 Asn Ile Thr Asp Val Glu Asp Lys Thr Ile Ala Gly Ala Ser Lys Lys  
 65 70 75 80  
 Asn Ile Pro Leu Gln Glu Tyr Thr Gln Pro Tyr Thr Glu Ala Phe Phe  
 85 90 95  
 Glu Asp Leu Asp Thr Leu Asn Ile Ala Arg Ala Asp Phe Tyr Pro His  
 100 105 110  
 Ala Thr His Tyr Ile Pro Gln Met Ile Gln Ala Ile Thr Lys Leu Leu  
 115 120 125  
 Glu Gln Gly Ile Ala Tyr Ile Gly Gln Asp Ala Ser Val Tyr Phe Ser  
 130 135 140  
 Leu Asn Arg Phe Pro Asn Tyr Gly Lys Leu Ser His Leu Asp Leu Ser  
 145 150 155 160  
 Ser Leu Arg Cys Cys Ser Arg Ile Ser Ala Asp Glu Tyr Asp Lys Glu  
 165 170 175  
 Asn Pro Ser Asp Phe Val Leu Trp Lys Ala Tyr Asn Pro Glu Arg Asp  
 180 185 190  
 Gly Val Ile Tyr Trp Glu Ser Pro Phe Gly Asn Arg Lys Thr Trp Met  
 195 200 205  
 Ala Phe Arg Met Phe Asp Tyr Gly Asp Gly Thr Ser Trp Arg Phe Phe  
 210 215 220  
 Gly Tyr Pro Cys Gly Arg Cys Arg  
 225 230

&lt;210&gt;1006

&lt;211&gt;242

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1006

Thr Ala Val Glu Asn Ile Arg Gln Gln Asn Leu Ala Leu Lys Ser Lys  
 1 5 10 15  
 Phe Lys Ile Asn Glu Leu Pro Cys Met Ile Leu Leu Ser His Glu Glu  
 20 25 30  
 Arg Glu Ile Tyr Arg Ile Gly Ser Phe Gly Asn Glu Thr Gly Ser Asn  
 35 40 45  
 Leu Gly Asp Ser Leu Cys His Ile Val Glu Ser Asp Ser Leu Leu Arg  
 50 55 60  
 Arg Ala Phe Pro Met Met Thr Ser Leu Ser Leu Ser Glu Leu Gln Arg  
 65 70 75 80  
 Tyr Tyr Arg Leu Ala Glu Glu Leu Ser His Lys Glu Phe Leu Lys His  
 85 90 95

Ala Leu Glu Leu Gly Val Arg Ser Asp Asp Tyr Phe Phe Leu Ser Glu  
 100 105 110  
 Lys Phe Arg Leu Leu Val Glu Val Gly Lys Met Asp Ser Glu Glu Cys  
 115 120 125  
 Gln Arg Ile Lys Lys Arg Leu Leu Asn Lys Asp Pro Lys Asn Glu Lys  
 130 135 140  
 Gln Thr His Phe Thr Val Ala Leu Ile Glu Phe Gln Glu Leu Ala Lys  
 145 150 155 160  
 Arg Ser Arg Ala Gly Val Arg Gln Asp Ala Ser Gln Val Ile Ala Pro  
 165 170 175  
 Leu Glu Ser Tyr Ile Ser Gln Phe Gly Gln Gln Asp Lys Asp Asn Leu  
 180 185 190  
 Trp Arg Val Glu Met Met Ile Ala Glu Phe Tyr Leu Asp Ser Asp Gln  
 195 200 205  
 Trp His His Ala Leu Gln His Ala Glu Val Ala Phe Glu Ala Ala Pro  
 210 215 220  
 Asn Glu Val Arg Ser His Ile Ser Arg Ser Leu Glu Tyr Ile Arg His  
 225 230 235 240  
 Gln Ser

&lt;210&gt;1007

&lt;211&gt;139

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1007

Val His Pro Leu Thr Leu Pro Lys Gln Ser Arg Val Leu Lys Arg Lys  
 1 5 10 15  
 Gln Phe Leu Tyr Ile Thr Arg Ser Gly Phe Cys Cys Arg Gly Ser Gln  
 20 25 30  
 Ala Thr Phe Tyr Val Val Pro Ser Arg His Pro Gly Thr Cys Arg Met  
 35 40 45  
 Gly Ile Thr Val Ser Lys Lys Phe Gly Lys Ala His Glu Arg Xaa Ser  
 50 55 60  
 Phe Lys Arg Val Val Arg Glu Val Phe Arg His Val Arg His Gln Leu  
 65 70 75 80  
 Pro Asn Cys Gln Ile Val Val Phe Pro Lys Gly His Lys Gln Arg Pro  
 85 90 95  
 Val Phe Ser Lys Leu Leu Gln Asp Phe Ile Asn Gln Ile Pro Glu Gly  
 100 105 110  
 Leu His Arg Leu Gly Lys Thr Lys Ala Thr Thr Gly Gly Glu Cys Thr  
 115 120 125  
 Pro Lys Ser Glu Lys Cys Val Thr Ala Pro Arg  
 130 135

&lt;210&gt;1008

&lt;211&gt;101

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1008

Met Ala Lys Lys Ser Ser Val Ala Arg Glu Ala Lys Arg Arg Arg Leu  
 1 5 10 15  
 Val Glu Ala Asn Phe Lys Lys Arg Ser Asp Leu Arg Lys Ile Val Lys  
 20 25 30  
 Ser Leu Ser Val Ser Glu Glu Glu Lys Glu Asn Ala Arg Ile Ser Leu  
 35 40 45  
 Asn Lys Met Lys Arg Asp Thr Ser Pro Thr Arg Leu His Asn Arg Cys  
 50 55 60  
 Leu Leu Thr Gly Arg Pro Arg Gly Tyr Leu Arg Lys Phe Ala Ile Ser  
 65 70 75 80  
 Arg Ile Cys Phe Arg Gln Met Ala Ser Met Gly Glu Ile Pro Gly Val  
 85 90 95  
 Ile Lys Ala Ser Trp  
 100

&lt;210&gt;1009

&lt;211&gt;169

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1009

Gln Thr Ile Asn Leu Ser Gly Thr Leu Arg Thr Met Leu Pro Ile Ser  
 1 5 10 15  
 Ile Leu Leu Phe Tyr Val Ile Leu Gly Cys Leu Ser Ala Tyr Ile Ala  
 20 25 30  
 Asp Lys Lys Lys Arg Asn Val Ile Gly Trp Phe Phe Ala Gly Ala Phe  
 35 40 45  
 Phe Gly Phe Ile Gly Leu Val Val Leu Leu Leu Leu Pro Ser Arg Arg  
 50 55 60  
 Asn Ala Leu Glu Lys Pro Gln Asn Asp Pro Phe Asp Asn Ser Asp Leu  
 65 70 75 80  
 Phe Asp Asp Leu Lys Lys Ser Leu Ala Gly Asn Asp Glu Ile Pro Ser  
 85 90 95  
 Ser Gly Asp Leu Gln Glu Ile Val Ile Asp Thr Glu Lys Trp Phe Tyr  
 100 105 110  
 Leu Asn Lys Asp Arg Glu Asn Val Gly Pro Ile Ser Phe Glu Glu Leu  
 115 120 125  
 Val Val Leu Leu Lys Gly Lys Thr Tyr Pro Glu Glu Ile Trp Val Trp  
 130 135 140  
 Lys Lys Gly Met Lys Asp Trp Gln Arg Val Lys Asp Val Pro Ser Leu  
 145 150 155 160  
 Gln Gln Ala Leu Lys Glu Ala Ser Lys  
 165

&lt;210&gt;1010

&lt;211&gt;169

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1010

His Ile Asn Arg Trp Thr Ile Arg Leu Ser Leu Thr Leu Ile Ile Ser  
 1 5 10 15  
 Thr Val Leu Tyr Phe Phe Ser Glu Glu Ile Glu Leu Ile Gly Gly Gly  
 20 25 30  
 Lys Met Glu Lys Gln Asn Leu Lys Leu Asp Val Lys Glu Ile Glu Phe  
 35 40 45  
 Pro Glu Thr Val Phe Ser Arg Asp Ile Glu Thr Arg Val Ile Gln Val  
 50 55 60  
 Ile Ile Leu His Cys Leu Ala Lys Ile Asn Gly Val Ser Leu Leu Gly  
 65 70 75 80  
 Gly Asn Leu Ile Asp Ala Leu Phe Gly Arg Asp Ile Glu Arg Met Lys  
 85 90 95  
 Gly Ile Tyr Val Glu Gln Asp Ser Lys Asn His Leu Val Lys Val Arg  
 100 105 110  
 Val Glu Val Asn Val Asp Tyr Gly Val Ser Ile Pro Glu Lys Thr Glu  
 115 120 125  
 Glu Ile Gln Gly Cys Ile Val Ser Glu Ile Ser Glu Tyr Thr Gly Leu  
 130 135 140  
 His Val Ala Ala Val His Val Ile Ile Lys Gly Leu Thr Gln Pro Lys  
 145 150 155 160  
 Asp Arg Ile Asp Glu Glu Ile Glu Glu Glu Val Ser Val Gln Asp Leu  
 165 170 175  
 Pro Ser Pro Glu Asp Phe Leu Leu Glu Asn Ser Glu Gly  
 180 185

&lt;210&gt;1011

&lt;211&gt;603

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1011

Met Arg Ile Glu Asp Phe Ser Leu Lys Leu Ile Pro Ser Ser Pro Gly  
 1 5 10 15  
 Val Tyr Leu Met Lys Asp Val His Asp Gln Val Leu Tyr Ile Gly Lys  
 20 25 30  
 Ala Lys Asn Leu Lys Asn Arg Leu Ala Ser Tyr Phe His Glu Lys Gly

1037



545 550 555 560  
 Leu Gln Lys Phe Lys Ser Trp Lys Gln Val Met Leu Ser Ser Gln Glu  
 565 570 575  
 Glu Leu Glu Ala Ile Pro Gly Leu Thr Lys Lys Asp Ile Ala Val Leu  
 580 585 590  
 Leu Ala Arg Gln Lys Asp Phe Asn Lys Ser Asp  
 595 600  
 <210>1012  
 <211>461  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1012  
 Gly Asp Pro Cys Thr Ser Arg Cys Cys Arg Ile Phe Leu Arg Gln Val  
 1 5 10 15  
 Thr Leu Arg Lys Asn Ile Lys Thr Tyr Leu Cys Gln Val Arg Asp Ile  
 20 25 30  
 Glu Arg Leu Met Thr Lys Val Thr Thr Gly Leu Ala Gly Pro Arg Asp  
 35 40 45  
 Ile Gly Thr Leu Arg Asp Ser Phe Ser Ala Gly Ala Gln Ile Tyr Glu  
 50 55 60  
 Gln Leu Ala Ser Ala Thr Leu Pro Glu Phe Phe Ile Asp Lys Cys Ser  
 65 70 75 80  
 Leu Asp Thr Lys Leu Ala Ser Leu Ile Ala Leu Leu Ser Lys Ser Leu  
 85 90 95  
 Asn Gly Asp Leu Pro Leu Arg Val Ser Asp Gly Asn Ile Phe Val Asp  
 100 105 110  
 Glu Phe His Asn Asp Leu Lys Arg Leu Arg His Asn Gln Glu His Ser  
 115 120 125  
 Gln Glu Trp Ile Trp Glu Tyr Gln Glu Arg Ile Arg Lys Glu Thr Gly  
 130 135 140  
 Ile Lys Lys Leu Lys Ile Cys Phe Ala Gln Ala Leu Gly Tyr Tyr Ile  
 145 150 155 160  
 Glu Val Ser Ser Glu Phe Ala Pro Gln Leu Pro Lys Asp Phe Ile Arg  
 165 170 175  
 Arg Gln Ser Arg Leu His Ala Glu Arg Phe Thr Thr Ile Glu Leu Gln  
 180 185 190  
 Gln Phe Gln Asp Asp Met Ser Asn Ile Ser Glu Lys Leu Gln Thr Leu  
 195 200 205  
 Glu Thr Gln Phe Phe Lys Asp Leu Cys Ser His Ile Leu Gln Leu Arg  
 210 215 220  
 Thr Glu Ile Leu Ala Leu Ser Gln Ser Leu Ala Asp Leu Asp Tyr Ile  
 225 230 235 240  
 Ile Ser Leu Ala Asp Leu Ala His Ala Gln Gly Tyr Cys Arg Pro Arg  
 245 250 255  
 Val Asp Met Ser Asp Thr Leu Cys Ile Tyr Arg Gly Cys His Pro Val  
 260 265 270  
 Ala Lys Thr Leu Val Asp Thr Gly Lys Phe Ile Pro Asn Asp Thr Glu  
 275 280 285  
 Met Arg Gly Ser Gln Thr Arg Met Ile Leu Leu Thr Gly Pro Asn Met  
 290 295 300  
 Ala Gly Lys Ser Thr Tyr Ile Arg Gln Ile Ala Leu Leu Val Ile Met  
 305 310 315 320  
 Ala Gln Met Gly Ser Tyr Ile Pro Ala Lys Ser Ala His Ile Gly Val  
 325 330 335  
 Ile Asp Lys Ile Phe Thr Arg Ile Gly Ala Gly Asp Asn Leu Ser Lys  
 340 345 350  
 Gly Met Ser Thr Phe Met Val Glu Met Ala Glu Thr Ala Asn Ile Leu  
 355 360 365  
 His Asn Ala Thr Asp Arg Ser Leu Val Ile Leu Asp Glu Val Gly Arg  
 370 375 380  
 Gly Thr Ser Thr Tyr Asp Gly Leu Ala Ile Ala Gln Ala Val Val Glu  
 385 390 395 400  
 Tyr Leu Leu Phe Thr Asp Lys Lys Lys Ala Lys Thr Leu Phe Ala Thr  
 405 410 415

His Tyr Lys Glu Leu Thr Thr Leu Glu Asp His Cys Pro His Val Glu  
 420 425 430  
 Asn Phe His Ala Gly Val Lys Asp Lys Ala Gly Gln Pro Val Phe Leu  
 435 440 445  
 Tyr Glu Ile Leu Lys Asp Ile His Lys Lys Val Ser Ala Phe Met Ser  
 450 455 460  
 Pro Gly Leu Leu Ala Phe Pro Phe Val Trp Tyr Arg Glu Leu Ser Arg  
 465 470 475 480  
 Ser

&lt;210&gt;1013

&lt;211&gt;339

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1013

Val Met Thr Glu Lys Lys Pro Thr Pro Met Met Glu Gln Trp His Gln  
 1 5 10 15  
 Cys Lys Glu Lys Ala Gly Asp Ser Val Leu Leu Phe Arg Met Gly Asp  
 20 25 30  
 Phe Tyr Glu Ala Phe Tyr Asp Asp Ala Val Leu Leu Ser Gln His Leu  
 35 40 45  
 Gln Leu Thr Leu Thr Gln Arg Gln Gly Ile Pro Met Ser Gly Ile Pro  
 50 55 60  
 Val Ser Thr Val Asp Thr Tyr Val Asp Arg Leu Ile Gly Lys Gly Phe  
 65 70 75 80  
 Lys Val Ala Val Ala Glu Gln Phe Gly Glu Pro Ala Lys Glu Lys Glu  
 85 90 95  
 Ser Lys Lys Ile Gly Pro Met Ala Arg Asp Ile Gln Arg Phe Val Thr  
 100 105 110  
 Pro Gly Thr Leu Leu Ser Ser Thr Leu Leu Gln Glu Lys Phe Asn Asn  
 115 120 125  
 Xaa Ile Val Ala Ile Thr Arg Ile Gly Ser Leu Phe Gly Phe Ala Cys  
 130 135 140  
 Leu Asp Leu Ser Thr Gly Ser Phe Phe Ile Glu Glu Cys Glu Asn Thr  
 145 150 155 160  
 Lys Glu Leu Val Asp Glu Ile Cys Arg Leu Ala Pro Ser Glu Val Leu  
 165 170 175  
 Ser Cys Asn Lys Phe Tyr Asn Lys Glu Thr Ala Ile Val Met Gln Leu  
 180 185 190  
 Gln Gln His Leu Lys Leu Thr Leu Ser Thr Tyr Ala Asp Trp Ala Phe  
 195 200 205  
 Glu His Lys Phe Ala Ser Gln Lys Leu Thr Thr His Phe Gln Val Ala  
 210 215 220  
 Ser Leu Asp Gly Phe Gly Leu Lys Gly Leu Val Pro Ala Ile Asn Ala  
 225 230 235 240  
 Ala Gly Gly Leu Leu Ser Tyr Ile Gln Asp Lys Leu Leu Leu Pro Thr  
 245 250 255  
 Lys His Ile Ala Ile Pro Gln Thr Arg Gly Lys Gln Gln Lys Leu Leu  
 260 265 270  
 Ile Asp Thr Ala Ser Gln Val Asn Leu Glu Leu Leu Ala Pro Leu Asn  
 275 280 285  
 Asp Pro Gln Gly Lys Asn Ser Leu Leu Arg Ile Met Asp His Thr Ser  
 290 295 300  
 Thr Pro Met Gly Gly Arg Leu Leu Arg Gln Ile Leu Ile Ser Pro Phe  
 305 310 315 320  
 Tyr Asn Pro Lys Glu Ile Leu Val Arg Gln Asp Ala Val Glu Phe Phe  
 325 330 335  
 Phe Gly Lys

&lt;210&gt;1014

&lt;211&gt;207

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1014

Leu Arg Thr Ala Met Tyr Thr Glu Glu Ser Leu Asp Asn Leu Arg His  
 1 5 10 15  
 Ser Ile Asp Ile Val Asp Val Leu Ser Glu His Ile His Leu Lys Arg  
 20 25 30  
 Ser Gly Ala Thr Tyr Lys Ala Cys Cys Pro Phe His Thr Glu Lys Thr  
 35 40 45  
 Pro Ser Phe Ile Val Asn Pro Ala Gly Ala His Tyr His Cys Phe Gly  
 50 55 60  
 Cys Gly Ala His Gly Asp Ala Ile Gly Phe Leu Met Gln His Leu Gly  
 65 70 75 80  
 Tyr Ser Phe Thr Glu Ala Ile Leu Val Leu Ser Lys Lys Phe Gln Val  
 85 90 95  
 Asp Leu Val Leu Gln Pro Lys Asp Ser Gly Tyr Thr Pro Pro Gln Gly  
 100 105 110  
 Leu Lys Glu Glu Leu Arg His Ile Asn Ser Glu Ala Glu Thr Phe Phe  
 115 120 125  
 Arg Tyr Cys Leu Tyr His Leu Pro Glu Ala Arg His Ala Leu Gln Tyr  
 130 135 140  
 Leu Tyr His Arg Gly Phe Ser Pro Asp Thr Ile Asp Arg Phe His Leu  
 145 150 155 160  
 Gly Tyr Gly Pro Glu Gln Ser Leu Phe Leu Gln Ala Met Glu Glu Arg  
 165 170 175  
 Lys Ile Ser Gln Glu Gln Leu His Thr Ala Gly Phe Phe Gly Asn Lys  
 180 185 190  
 Trp Phe Leu Phe Ala Arg Arg Ile Ser Phe Leu Ser Thr Met Arg  
 195 200 205  
 <210>1015  
 <211>402  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1015  
 Met Val Phe Val Cys Thr Lys Asn Leu Phe Pro Val His Asp Ala Leu  
 1 5 10 15  
 Gly His Thr Ile Gly Phe Ser Ala Arg Lys Phe Leu Glu Asn Ser Gln  
 20 25 30  
 Gly Gly Lys Tyr Val Asn Thr Pro Glu Thr Pro Ile Phe Lys Lys Ser  
 35 40 45  
 Arg Ile Leu Phe Gly Leu Asn Phe Ser Arg Arg Arg Ile Ala Lys Glu  
 50 55 60  
 Xaa Lys Val Ile Leu Val Glu Gly Gln Ala Asp Cys Leu Gln Met Ile  
 65 70 75 80  
 Asp Ser Gly Phe Asn Cys Thr Val Ala Ala Gln Gly Thr Ala Phe Thr  
 85 90 95  
 Glu Glu His Val Lys Glu Leu Ser Lys Leu Gly Val Leu Lys Val Phe  
 100 105 110  
 Leu Leu Phe Asp Ser Asp Glu Ala Gly Asn Lys Ala Ala Leu Arg Val  
 115 120 125  
 Gly Asp Leu Cys Gln Thr Ala Gln Met Ser Val Phe Val Cys Lys Leu  
 130 135 140  
 Pro Gln Gly His Asp Pro Asp Ser Phe Leu Met Gln Arg Gly Ser Ser  
 145 150 155 160  
 Gly Leu Ile Ala Leu Leu Glu Gln Ser Gln Asp Tyr Leu Thr Phe Leu  
 165 170 175  
 Ile Ser Glu Lys Met Ser Ser Tyr Pro Lys Phe Gly Pro Arg Glu Lys  
 180 185 190  
 Ala Leu Leu Val Glu Glu Ala Ile Arg Gln Ile Lys His Trp Gly Ser  
 195 200 205  
 Pro Ile Leu Val Tyr Glu His Leu Lys Gln Leu Ala Ser Leu Met Met  
 210 215 220  
 Val Pro Glu Asp Met Val Leu Ser Leu Ala Asn Pro Gln Val Thr Ala  
 225 230 235 240  
 Glu Pro Gln Asn Ile Pro Ile Lys Gln Lys Val Pro Lys Ile His Pro  
 245 250 255  
 His Ile Val Met Glu Thr Asp Ile Leu Arg Cys Met Leu Ph Cys Gly

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                260                265                270
Ser Asn Thr Lys Ile Leu Tyr Thr Ala Gln Phe Tyr Phe Val Pro Glu
                275                280                285
Asp Phe Lys His Pro Glu Cys Arg Lys Leu Phe Ala Phe Met Ile Ser
                290                295                300
Tyr Tyr Glu Lys Tyr Arg Lys Asn Val Pro Phe Asp Glu Ala Cys Gln
305                310                315                320
Val Leu Ser Asp Ser Gln Ile Leu Gln Leu Leu Thr Lys Arg Arg Leu
                325                330                335
Asn Thr Glu Ala Leu Asp Thr Ile Phe Val Gln Ser Leu Gln Lys Met
                340                345                350
Ala Asp Arg Arg Trp Arg Glu Gln Cys Lys Pro Leu Ser Leu Asn Gln
                355                360                365
Asn Ile Gln Asp Lys Lys Leu Glu Ile Leu Glu Asp Tyr Val Gln Leu
370                375                380
Arg Lys Asp Arg Thr Ile Ile Thr Leu Leu Asp Pro Glu Ser Glu Leu
385                390                395                400
Ile Pro

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&lt;210&gt;1016

&lt;211&gt;120

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1016

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Ile Lys Ile Met Met His Arg Tyr Phe Ile Pro Leu Leu Ala Leu Leu
1                5                10                15
Ile Phe Ser Pro Ser Leu Val Arg Ala Glu Leu Gln Pro Ser Glu Asn
                20                25                30
Arg Lys Gly Gly Trp Pro Thr Gln Leu Ser Cys Ala Glu Gly Ser Gln
                35                40                45
Leu Phe Cys Lys Phe Glu Ala Ala Tyr Asn Asn Ala Ile Glu Glu Gly
50                55                60
Lys Pro Gly Ile Leu Val Phe Phe Ser Glu Arg Pro Thr Pro Glu Phe
65                70                75                80
Ala Asp Leu Thr Asn Gly Ser Phe Ser Leu Ser Thr Pro Ile Ala Lys
                85                90                95
Gly Phe Asn Val Val Val Leu Cys Pro Gly Leu Ile Ser Pro Leu Asp
100                105                110
Phe Phe His Gln Asn Gly Ile Leu
115                120

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&lt;210&gt;1017

&lt;211&gt;220

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1017

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Ser Ile Phe Lys Asn Lys Ile Leu Pro Ser Tyr Phe Gly His Asn Phe
1                5                10                15
Asp Gln Leu Arg Arg His Tyr Met Arg Ile Ala Leu Ser Leu Leu Ser
                20                25                30
Leu Leu Met Ile Phe Pro Ile Phe Gly Glu Glu Ser Arg Pro Gly Ser
                35                40                45
Glu Asp Gly Asn Ser Asn Thr Gln Glu Ile Val Gly Ser Gln Asp Thr
50                55                60
Gln Val Cys Leu Tyr His Ser Tyr Glu Gln Gly Leu Gln Ala Ser Arg
65                70                75                80
Ile Glu Gly Lys Pro Leu Val Ile Val Val Leu Cys Asn Ser Gly Asp
                85                90                95
Asp Gly Gln Ala Cys Thr Ile Gly Leu Ser Glu Thr Cys Glu Glu Val
100                105                110
Leu Ser Val Leu Ser Gly Ser Ile Phe Ser Glu Leu Ala Asn Phe Val
115                120                125
Val Leu Val Pro Ser Gly Val Asn Pro Leu Ile Tyr Pro Pro Ile Glu
130                135                140
Asp Pro Ile Leu Ala Glu Ile Val Lys Phe Lys Glu Leu Phe Lys Asp

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145          150          155          160
Glu Ser Phe Pro Thr Gly Leu Ser Ile Ile Val Val Gly Val Thr Pro
          165          170          175
Glu Gly Pro Gly Asp Ile Ile Glu Val Ser Pro Val Ser Leu Thr Val
          180          185          190
Glu Glu Glu Glu Thr Leu Pro Ser Glu Gln Thr Thr Glu Val Glu Ser
          195          200          205
Thr Ser Glu Leu Gln Ser Glu Asp Pro Ala Ile Ala
          210          215          220
<210>1018
<211>1014
<212>PRT
<213>Chlamydia pneumoniae
<400>1018
Leu Glu Ser Phe Val Ser Glu His Pro Leu Thr Leu Gln Ser Met Ile
1          5          10          15
Ala Thr Ile Leu Arg Phe Trp Ser Glu Gln Gly Cys Val Ile His Gln
          20          25          30
Gly Tyr Asp Leu Glu Val Gly Ala Gly Thr Phe Asn Pro Ala Thr Phe
          35          40          45
Leu Arg Ala Leu Gly Pro Glu Pro Tyr Lys Ala Ala Tyr Val Glu Pro
          50          55          60
Ser Arg Arg Pro Gln Asp Gly Arg Tyr Gly Val His Pro Asn Arg Leu
          65          70          75          80
Gln Asn Tyr His Gln Leu Gln Val Ile Leu Lys Pro Val Pro Glu Asn
          85          90          95
Phe Leu Ser Leu Tyr Thr Glu Ser Leu Arg Ala Ile Gly Leu Asp Leu
          100          105          110
Arg Asp His Asp Ile Arg Phe Ile His Asp Asp Trp Glu Asn Pro Thr
          115          120          125
Ile Gly Ala Trp Gly Leu Gly Trp Glu Val Trp Leu Asn Gly Met Glu
          130          135          140
Ile Thr Gln Leu Thr Tyr Phe Gln Ala Ile Gly Ser Lys Pro Leu Asp
          145          150          155          160
Thr Ile Ser Gly Glu Ile Thr Tyr Gly Ile Glu Arg Ile Ala Met Tyr
          165          170          175
Leu Gln Lys Lys Thr Ser Ile Tyr Asp Val Leu Trp Asn Asp Thr Leu
          180          185          190
Thr Tyr Gly Gln Ile Thr Gln Ala Ser Glu Lys Ala Trp Ser Glu Tyr
          195          200          205
Asn Phe Asp Tyr Ala Asn Thr Glu Met Trp Phe Lys His Phe Glu Asp
          210          215          220
Phe Ala Glu Glu Ala Leu Arg Thr Leu Lys Asn Gly Leu Ser Val Pro
          225          230          235          240
Ala Tyr Asp Phe Val Ile Lys Ala Ser His Ala Phe Asn Ile Leu Asp
          245          250          255
Ala Arg Gly Thr Ile Ser Val Thr Glu Arg Thr Arg Tyr Ile Ala Arg
          260          265          270
Ile Arg Gln Leu Thr Arg Leu Val Ala Asp Ser Tyr Val Glu Trp Arg
          275          280          285
Ala Ser Leu Asn Tyr Pro Leu Leu Ser Leu Ser Ser Thr Ser Glu Pro
          290          295          300
Lys Glu Thr Ser Glu Ser Val Val Pro Met Ile Ser Ser Thr Glu Asp
          305          310          315          320
Leu Leu Leu Glu Ile Gly Ser Glu Glu Leu Pro Ala Thr Phe Val Pro
          325          330          335
Ile Gly Ile Gln Gln Leu Glu Ser Leu Ala Arg Gln Val Leu Thr Asp
          340          345          350
His Asn Ile Val Tyr Glu Gly Leu Glu Val Leu Gly Ser Pro Arg Arg
          355          360          365
Leu Ala Leu Leu Val Lys Asn Val Ala Pro Glu Val Val Gln Lys Ala
          370          375          380
Phe Glu Lys Lys Gly Pro Met Leu Thr Ser Leu Phe Ser Pro Asp Gly
          385          390          395          400

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Ser | Pro | Gln | Gly | Gln | Gln | Phe | Phe | Ala | Ser | Gln | Gly | Val | Asp | 405 | 410 | 415 |
| Ile | Ser | His | Tyr | Gln | Asp | Leu | Ser | Arg | His | Ala | Ser | Leu | Ala | Ile | Arg | 420 | 425 | 430 |
| Thr | Val | Asn | Gly | Ser | Glu | Tyr | Leu | Phe | Leu | Leu | His | Pro | Glu | Ile | Arg | 435 | 440 | 445 |
| Leu | Arg | Thr | Ala | Asp | Ile | Leu | Met | Gln | Glu | Leu | Pro | Leu | Leu | Ile | Gln | 450 | 455 | 460 |
| Arg | Met | Lys | Phe | Pro | Lys | Lys | Met | Val | Trp | Asp | Asn | Ser | Gly | Val | Glu | 465 | 470 | 475 |
| Tyr | Ala | Arg | Pro | Ile | Arg | Trp | Leu | Val | Ala | Leu | Tyr | Gly | Glu | His | Ile | 485 | 490 | 495 |
| Leu | Pro | Ile | Thr | Leu | Gly | Thr | Ile | Ile | Ala | Ser | Arg | Asn | Ser | Phe | Gly | 500 | 505 | 510 |
| His | Arg | Gln | Leu | Asp | Pro | Arg | Lys | Ile | Ser | Ile | Ser | Ser | Pro | Gln | Asp | 515 | 520 | 525 |
| Tyr | Val | Glu | Thr | Leu | Arg | Gln | Ala | Cys | Val | Val | Val | Ser | Gln | Lys | Glu | 530 | 535 | 540 |
| Arg | Arg | Met | Ile | Ile | Glu | Gln | Gly | Leu | Arg | Ala | His | Ser | Ser | Asp | Thr | 545 | 550 | 555 |
| Ile | Ser | Ala | Ile | Pro | Leu | Pro | Arg | Leu | Ile | Glu | Glu | Ala | Thr | Phe | Leu | 565 | 570 | 575 |
| Ser | Glu | His | Pro | Phe | Val | Ser | Cys | Gly | Gln | Phe | Ser | Glu | Gln | Phe | Cys | 580 | 585 | 590 |
| Ala | Leu | Pro | Lys | Glu | Leu | Leu | Ile | Ala | Glu | Met | Val | Asn | His | Gln | Lys | 595 | 600 | 605 |
| Tyr | Phe | Pro | Thr | His | Glu | Thr | Ser | Ser | Gly | Ala | Ile | Ser | Asn | Phe | Phe | 610 | 615 | 620 |
| Ile | Val | Val | Cys | Asp | Asn | Ser | Pro | Asn | Asp | Thr | Ile | Ile | Glu | Gly | Asn | 625 | 630 | 635 |
| Glu | Lys | Ala | Leu | Thr | Pro | Arg | Leu | Thr | Asp | Gly | Glu | Phe | Leu | Phe | Lys | 645 | 650 | 655 |
| Gln | Asp | Leu | Gln | Thr | Pro | Leu | Thr | Thr | Phe | Ile | Glu | Lys | Leu | Lys | Ser | 660 | 665 | 670 |
| Val | Thr | Tyr | Phe | Glu | Ala | Leu | Gly | Ser | Leu | Tyr | Asp | Lys | Val | Glu | Arg | 675 | 680 | 685 |
| Leu | Lys | Ala | His | Gln | Arg | Val | Phe | Ser | Thr | Phe | Ser | Ser | Leu | Ala | Ala | 690 | 695 | 700 |
| Ser | Glu | Asp | Leu | Asp | Ile | Ala | Ile | Gln | Tyr | Cys | Lys | Ala | Asp | Leu | Val | 705 | 710 | 715 |
| Ser | Ala | Val | Val | Asn | Glu | Phe | Pro | Glu | Leu | Gln | Gly | Ile | Met | Gly | Glu | 725 | 730 | 735 |
| Tyr | Tyr | Leu | Lys | His | Ala | Asn | Leu | Pro | Thr | Ala | Ser | Ala | Val | Ala | Val | 740 | 745 | 750 |
| Gly | Glu | His | Leu | Arg | His | Ile | Thr | Met | Gly | Gln | Lys | Leu | Ser | Thr | Ile | 755 | 760 | 765 |
| Gly | Thr | Leu | Leu | Ser | Leu | Leu | Asp | Arg | Leu | Asp | Asn | Leu | Leu | Ala | Cys | 770 | 775 | 780 |
| Phe | Ile | Leu | Gly | Leu | Lys | Pro | Thr | Ser | Ser | His | Asp | Pro | Tyr | Ala | Leu | 785 | 790 | 795 |
| Arg | Arg | Gln | Ser | Leu | Glu | Val | Leu | Thr | Leu | Val | Ser | Ala | Ser | Arg | Leu | 805 | 810 | 815 |
| Pro | Ile | Asp | Leu | Ala | Ser | Leu | Leu | Asp | Arg | Leu | Ala | Asp | His | Phe | Pro | 820 | 825 | 830 |
| Ser | Thr | Ile | Glu | Glu | Lys | Val | Trp | Asp | Lys | Ser | Lys | Thr | Ile | His | Glu | 835 | 840 | 845 |
| Ile | Leu | Glu | Phe | Ile | Trp | Gly | Arg | Leu | Lys | Thr | Phe | Met | Gly | Ser | Leu | 850 | 855 | 860 |
| Glu | Phe | Arg | Lys | Asp | Glu | Ile | Ala | Ala | Val | Leu | Ile | Asp | Ser | Ala | Thr | 865 | 870 | 875 |
| Xaa | Asn | Pro | Ile | Glu | Ile | Leu | Asp | Thr | Ala | Glu | Ala | Leu | Gln | Leu | Leu | 885 | 890 | 895 |
| Lys | Glu | Glu | His | Thr | Glu | Lys | Leu | Ala | Val | Ile | Thr | Thr | Thr | His | Asn | 900 | 905 | 910 |

Arg Leu Lys Lys Ile L u Ser Ser Leu Lys Leu Ser Met Thr Ser Ser  
 915 920 925  
 Pro Ile Glu Val Leu Gly Asp Arg Glu Ser Asn Phe Lys Gln Val Leu  
 930 935 940  
 Asp Ala Phe Pro Gly Phe Pro Lys Glu Thr Ser Ala His Ala Phe Leu  
 945 950 955 960  
 Glu Tyr Phe Leu Ser Leu Ala Asp Leu Ser Asn Asp Ile Gln Asp Phe  
 965 970 975  
 Leu Asn Thr Val His Ile Ala Asn Asp Asp Gly Ala Ile Arg Asn Leu  
 980 985 990  
 Arg Ile Ser Leu Leu Leu Thr Ala Met Asp Lys Phe Ser Leu Cys His  
 995 1000 1005  
 Trp Glu Ser Val Ala Val  
 1010

&lt;210&gt;1019

&lt;211&gt;57

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1019

Asn Gly Asn Asp Val Leu Lys Thr Cys Ser Leu Ile Leu Leu Asn Leu  
 1 5 10 15  
 Cys Arg Tyr Phe Leu Leu Val Phe Cys Thr Ala Val Phe Phe Lys Arg  
 20 25 30  
 Tyr Ile Leu Ile Leu Thr Arg Thr Val Arg His Thr Glu Ile Tyr Ala  
 35 40 45  
 Cys Gly Glu Gly Val Thr Val Ala Leu Lys Ser Met Leu Pro Ser Met  
 50 55 60  
 Lys Gln Glu Ser Pro Ala Leu Ala Lys Glu Asn Val Lys Arg Lys Asn  
 65 70 75 80  
 Val Ile Pro Trp Ser His Leu Cys Gln Asn Ile Pro Ser Pro Tyr Ser  
 85 90 95  
 Leu

&lt;210&gt;1020

&lt;211&gt;207

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1020

Arg Val Gly Leu Pro Asn Tyr Ile Thr Phe Ser Arg Leu Phe Ile Thr  
 1 5 10 15  
 Pro Ile Phe Met Ile Leu Tyr Leu Lys Gly Lys Trp Phe Gly Ile Thr  
 20 25 30  
 Pro Val Val Leu Pro Tyr Val Leu Leu Ala Leu Leu Ala Ile Ser Glu  
 35 40 45  
 Leu Thr Asp Ala Ile Asp Gly Tyr Val Ala Arg Lys Phe Ser Gln Val  
 50 55 60  
 Thr Asp Leu Gly Lys Leu Asp Pro Met Ala Asp Ser Ile Tyr Arg  
 65 70 75 80  
 Ile Ser Ile Tyr Leu Thr Phe Thr Gln Pro Pro Val Asn Leu Pro Leu  
 85 90 95  
 Leu Leu Val Phe Ile Phe Leu Ala Arg Asp Ser Val Ile Ser Thr Leu  
 100 105 110  
 Arg Thr Val Cys Ala Phe Arg Gly Arg Val Val Ala Ala Arg Ala Ser  
 115 120 125  
 Gly Lys Leu Lys Ala Ile Leu Gln Gly Val Ser Phe Phe Leu Ile Leu  
 130 135 140  
 Leu Val Met Ile Pro His Ser Leu Gly Leu Leu Ser Gln Asn Gly Leu  
 145 150 155 160  
 Glu Ile Phe Ala Ser Val Thr Val Ser Ile Ile Ala Val Tyr Ser Ile  
 165 170 175  
 Ala Ser Gly Ile Glu Tyr Phe Trp Met Asn Lys Asn Phe Leu Ser Gln  
 180 185 190  
 Arg Ala Lys Thr Lys Asp Ser Glu Lys Asn His Glu Ser Lys Asp  
 195 200 205

&lt;210&gt;1021

&lt;211&gt;476

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1021

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Met Arg Ile Val Gln Val Ala Val Glu Phe Thr Pro Ile Val Lys Val
  1           5           10           15
Gly Gly Leu Gly Asp Ala Val Ala Ser Leu Ser Lys Glu Leu Ala Lys
          20           25           30
Gln Asn Asp Val Glu Val Leu Leu Pro His Tyr Pro Leu Ile Ser Lys
          35           40           45
Phe Ser Ser Ser Gln Val Leu Ser Glu Arg Ser Phe Tyr Tyr Glu Phe
          50           55           60
Leu Gly Lys Gln Gln Ala Ser Ala Ile Ser Tyr Ser Tyr Glu Gly Leu
          65           70           75           80
Thr Leu Thr Ile Ile Thr Leu Asp Ser Gln Ile Glu Leu Phe Ser Thr
          85           90           95
Thr Ser Val Tyr Ser Glu Asn Asn Val Val Arg Phe Ser Ala Phe Ala
          100           105           110
Ala Ala Ala Ala Ala Tyr Leu Gln Glu Ala Asp Pro Ala Asp Ile Val
          115           120           125
His Leu His Asp Trp His Val Gly Leu Leu Ala Gly Leu Leu Lys Asn
          130           135           140
Pro Leu Asn Pro Val His Ser Lys Ile Val Phe Thr Ile His Asn Phe
          145           150           155           160
Gly Tyr Arg Gly Tyr Cys Ser Thr Gln Leu Leu Ala Ala Ser Gln Ile
          165           170           175
Asp Asp Phe His Leu Ser His Tyr Gln Leu Phe Arg Asp Pro Gln Thr
          180           185           190
Ser Val Leu Met Lys Gly Ala Leu Tyr Cys Ser Asp Tyr Ile Thr Thr
          195           200           205
Val Ser Leu Thr Tyr Val Gln Glu Ile Ile Asn Asp Tyr Ser Asp Tyr
          210           215           220
Glu Leu His Asp Ala Ile Leu Ala Arg Asn Ser Val Phe Ser Gly Ile
          225           230           235           240
Ile Asn Gly Ile Asp Glu Asp Val Trp Asn Pro Lys Thr Asp Pro Ala
          245           250           255
Leu Ala Val Gln Tyr Asp Ala Ser Leu Leu Ser Glu Pro Asp Val Leu
          260           265           270
Phe Thr Lys Lys Glu Glu Asn Arg Ala Val Leu Tyr Glu Lys Leu Gly
          275           280           285
Ile Ser Ser Asp Tyr Phe Pro Leu Ile Cys Val Ile Ser Arg Ile Val
          290           295           300
Glu Glu Lys Gly Pro Glu Phe Met Lys Glu Ile Ile Leu His Ala Met
          305           310           315           320
Glu His Ser Tyr Ala Phe Ile Leu Ile Gly Thr Ser Gln Asn Glu Val
          325           330           335
Leu Leu Asn Glu Phe Arg Asn Leu Gln Asp Cys Leu Ala Ser Ser Pro
          340           345           350
Asn Ile Arg Leu Ile Leu Asp Phe Asn Asp Pro Leu Ala Arg Leu Thr
          355           360           365
Tyr Ala Ala Ala Asp Met Ile Cys Ile Pro Ser His Arg Glu Ala Cys
          370           375           380
Gly Leu Thr Gln Leu Ile Ala Met Arg Tyr Gly Thr Val Pro Leu Val
          385           390           395           400
Arg Lys Thr Gly Gly Leu Ala Asp Thr Val Ile Pro Gly Val Asn Gly
          405           410           415
Phe Thr Phe Ph Asp Thr Asn Asn Phe Asn Glu Phe Arg Ala Met Leu
          420           425           430
Ser Asn Ala Val Thr Thr Tyr Arg Gln Glu Pro Asp Val Trp Leu Asn
          435           440           445
Leu Ile Glu Ser Gly Met Leu Arg Ala Ser Gly Leu Asp Ala Met Ala
          450           455           460
Lys His Tyr Val Asn Leu Tyr Gln Ser Leu Leu Ser

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465 470 475  
 <210>1022  
 <211>185  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1022  
 Met Glu Leu Val Val Thr Ser Arg Glu Thr Gly Lys Lys Ser Phe Leu  
 1 5 10 15  
 Lys Lys Ile Arg Gln Gln Gly Gly Ile Pro Ala Val Val Tyr Ser Ala  
 20 25 30  
 Gly Lys Ser Leu Ala Asn Ile Thr Val Asp Ala Leu Val Phe Lys Lys  
 35 40 45  
 Phe Leu Ser Asn Leu Glu Ser Gly Ala Leu Ser Ser Thr Val Phe Ser  
 50 55 60  
 Leu Ser Tyr Glu Gly Arg Ile Ile Lys Ala Leu Val Lys Asp Ile Gln  
 65 70 75 80  
 Tyr Gln Ile Thr Thr Tyr Asp Val Ile His Leu Asp Phe Glu Glu Leu  
 85 90 95  
 Val Glu Asp Arg Pro Val Lys Leu Asn Ile Pro Ile Arg Cys Ile Asn  
 100 105 110  
 Ala Val Asp Cys Ile Gly Val Lys Leu Gly Gly Ser Leu Arg Gln Val  
 115 120 125  
 Ile Arg Ala Val Arg Val Val Cys Lys Pro Lys Asp Ile Val Pro Phe  
 130 135 140  
 Leu Glu Leu Asp Val Arg Ser Val Gly Leu Ser Gln Thr Arg Lys Leu  
 145 150 155 160  
 Ser Asp Ile Lys Ile Pro Ala Gly Ile Glu Thr Ile Thr Pro Leu Lys  
 165 170 175  
 Glu Val Ala Ile Thr Val Ser Arg Arg  
 180 185

&lt;210&gt;1023

&lt;211&gt;150

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1023

Met Ala Lys Leu Ile Val Ala Ile Gly Asn Pro Arg His Gly Tyr Ala  
 1 5 10 15  
 Asn Thr Arg His Asn Ala Gly Phe Leu Leu Ala Asp Arg Leu Val Glu  
 20 25 30  
 Glu Leu Gln Gly Pro Pro Phe Lys Pro Leu Ser Lys Cys His Ala Leu  
 35 40 45  
 Met Thr Leu Val Glu Ser Ser Ser Gly Pro Leu Val Phe Ile Lys Pro  
 50 55 60  
 Thr Thr Phe Val Asn Leu Ser Gly Lys Ala Val Val Leu Ala Lys Lys  
 65 70 75 80  
 Tyr Phe Asn Val Ala Leu Ser His Ile Leu Val Leu Ala Asp Asp Val  
 85 90 95  
 Asn Arg Ser Phe Gly Lys Leu Arg Leu Cys Phe Asn Gly Gly Ser Gly  
 100 105 110  
 Gly His Asn Gly Leu Lys Ser Ile Thr Ala Ser Leu Gly Ser Asn Glu  
 115 120 125  
 Tyr Trp Gln Leu Arg Phe Gly Val Gly Arg Pro Leu Glu Glu Val Leu  
 130 135 140  
 Ser Tyr Leu Ile Ser Phe  
 145 150

&lt;210&gt;1024

&lt;211&gt;112

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1024

Met Gly Lys Lys Glu Asn Gln Leu Tyr Glu Gly Ala Tyr Val Phe Ser  
 1 5 10 15  
 Val Thr Leu Ser Glu Glu Ala Arg Arg Lys Ala Leu Asp Lys Val Ile  
 20 25 30

Ser Gly Ile Thr Asn Tyr Gly Gly Glu Ile His Lys Ile His Asp Gln  
 35 40 45  
 Gly Arg Lys Lys Leu Ala Tyr Thr Ile Arg Gly Ala Arg Glu Gly Tyr  
 50 55 60  
 Tyr Tyr Phe Ile Tyr Phe Ser Val Ser Pro Gly Ala Ile Thr Glu Leu  
 65 70 75 80  
 Trp Lys Glu Tyr His Leu Asn Glu Asp Leu Leu Arg Phe Met Thr Leu  
 85 90 95  
 Arg Ala Asp Ser Val Lys Glu Val Leu Glu Phe Ala Ser Leu Pro Glu  
 100 105 110

&lt;210&gt;1025

&lt;211&gt;82

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1025

Met Asn Lys Pro Val His Asn Asn Glu His Arg Arg Lys Arg Phe Asn  
 1 5 10 15  
 Lys Lys Cys Pro Phe Val Ser Ala Gly Trp Lys Thr Ile Asp Tyr Lys  
 20 25 30  
 Asp Val Glu Thr Leu Lys Lys Phe Ile Thr Glu Arg Gly Lys Val Leu  
 35 40 45  
 Pro Arg Arg Ile Thr Gly Val Ser Ser Arg Phe Gln Gly Val Leu Ser  
 50 55 60  
 Gln Ala Ile Lys Arg Ala Arg His Leu Gly Leu Leu Pro Phe Val Gly  
 65 70 75 80  
 Glu Asp

&lt;210&gt;1026

&lt;211&gt;169

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1026

Met Lys Gln Gln Leu Leu Leu Leu Glu Asp Val Asp Gly Leu Gly Arg  
 1 5 10 15  
 Ser Gly Asp Leu Ile Thr Ala Arg Pro Gly Tyr Val Arg Asn Tyr Leu  
 20 25 30  
 Ile Pro Lys Lys Lys Ala Val Ile Ala Gly Ala Gly Thr Leu Arg Leu  
 35 40 45  
 Gln Ala Lys Leu Lys Glu Gln Arg Leu Ile Gln Ala Ala Asp Lys  
 50 55 60  
 Ala Asp Ser Glu Arg Ile Ala Gln Ala Leu Lys Asp Ile Val Leu Glu  
 65 70 75 80  
 Phe Gln Val Arg Val Asp Pro Asp Asn Asn Met Tyr Gly Ser Val Thr  
 85 90 95  
 Ile Ala Asp Ile Ile Ala Glu Ala Ala Lys Lys Asn Ile Phe Leu Val  
 100 105 110  
 Arg Lys Asn Phe Pro His Ala His Tyr Ala Ile Lys Asn Leu Gly Lys  
 115 120 125  
 Lys Asn Ile Pro Leu Lys Leu Lys Glu Glu Val Thr Ala Thr Leu Leu  
 130 135 140  
 Val Glu Val Thr Ser Asp Asn Glu Tyr Val Thr Val Leu Ala Gln Gly  
 145 150 155 160  
 Lys Gln Thr Glu Glu Asn Gln Glu Gly  
 165

&lt;210&gt;1027

&lt;211&gt;81

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1027

Val Gly Arg Glu Cys Glu Gly Leu Phe Met Ser Tyr Lys Ile Thr Leu  
 1 5 10 15  
 Pro Lys Ala Asp Glu Thr Thr Ala Lys Lys Val Thr Lys Ile Ser Glu  
 20 25 30  
 Ala Ser Thr Leu Ile Phe Ser Val Leu Lys Glu Lys Ala Ser Leu Gly

35 40 45  
 Asn Val His Gly Phe Cys Gln Ala Glu Asn Ser Leu Ser Val Glu Ala  
 50 55 60  
 Asn Lys Ile Ile Ser Val Ala Glu Asn Thr Leu Ala Gly Cys Phe Cys  
 65 70 75 80  
 Lys

&lt;210&gt;1028

&lt;211&gt;455

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1028

Leu Val Trp Phe Ser Met Ile Leu Pro Pro Tyr Ser Tyr Ser Leu Lys  
 1 5 10 15  
 Ile Gly Ala Ala Val Leu Phe Phe Cys Ser Ile Leu His Thr Phe Leu  
 20 25 30  
 Thr Pro Trp Leu Tyr Thr Leu Cys Gln Ser Tyr Glu His Lys Lys Leu  
 35 40 45  
 Val Phe Pro Glu Cys Trp Lys Arg Tyr Ala Arg Leu Ser Glu Leu Phe  
 50 55 60  
 Arg Ile Leu Ser Arg Val Glu Ile Val Phe Phe Leu Trp Ala Val Pro  
 65 70 75 80  
 Leu Phe Phe Trp Phe Leu Tyr Thr Glu Gly Tyr Arg Ile Ser Met Ala  
 85 90 95  
 Tyr Phe Asn Ser Arg Asn Tyr Gly Phe Ala Val Phe Ile Met Val Ile  
 100 105 110  
 Leu Ile Leu Leu Glu Ser Arg Pro Ile Val Tyr Phe Ala Glu Leu Val  
 115 120 125  
 Leu Ser Ser Ile Ala Lys Leu Gly Lys Thr Ser Pro Lys Ser Trp Trp  
 130 135 140  
 Trp Thr Leu Met Ile Ala Pro Pro Leu Leu Ser Cys Leu Leu Lys Glu  
 145 150 155 160  
 Thr Gly Ala Met Ile Ile Gly Ala Thr Leu Leu Met Arg His Phe Tyr  
 165 170 175  
 Val Phe Thr Pro Ser Arg Arg Phe Ala Tyr Ala Thr Ile Gly Leu Leu  
 180 185 190  
 Phe Ser Asn Ile Ser Ile Gly Gly Leu Thr Ser Tyr Val Ser Ser Arg  
 195 200 205  
 Ala Leu Phe Leu Ile Phe Pro Ala Leu Lys Trp Glu His Ser Phe Phe  
 210 215 220  
 Leu Ser His Phe Ala Trp Lys Ala Ile Val Ala Ile Leu Ile Ser Thr  
 225 230 235 240  
 Thr Ile Tyr Tyr Phe Ile Phe Arg Lys Glu Phe Lys Lys Phe Pro Asp  
 245 250 255  
 Ile Pro Ser Asp Lys Asp Pro Ser Val Glu Lys Val Pro Trp Trp Ile  
 260 265 270  
 Ile Cys Val Asn Ile Ile Phe Val Gly Ser Ile Ile Leu Ser Arg Ser  
 275 280 285  
 Thr Pro Leu Phe Met Gly Ala Leu Leu Leu Phe Tyr Leu Gly Phe Gln  
 290 295 300  
 Lys Phe Thr Ile Phe Tyr Gln Asp Pro Ile Asn Leu Ser Lys Val Cys  
 305 310 315 320  
 Tyr Val Gly Leu Phe Tyr Ala Gly Leu Val Val Phe Gly Asp Leu Gln  
 325 330 335  
 Glu Trp Trp Val Leu Asn Leu Met Gln Gly Leu Ser Asp Phe Gly Tyr  
 340 345 350  
 Met Thr Val Ser Tyr Thr Leu Ser Ile Phe Leu Asp Asn Ala Leu Val  
 355 360 365  
 Asn Tyr Leu Val His Asn Leu Ser Val Ala Thr Asp Cys Tyr His Tyr  
 370 375 380  
 Leu Val Val Ala Gly Cys Met Ala Ala Gly Gly Leu Thr Leu Val Ser  
 385 390 395 400  
 Asn Ile Pro Asn Ile Val Gly Tyr Leu Ile Leu Arg Ser Ala Phe Pro  
 405 410 415

Ser Ser Thr Ile His Met Gly Trp Leu Phe Leu Gly Ala Leu Gly Pro  
 430 425 430  
 Ser Ile Ile Ser Leu Gly Val Phe Trp Leu Leu Lys Asn Val Pro Glu  
 435 440 445  
 Phe Leu Tyr Cys Phe Phe Arg  
 450 455  
 <210>1029  
 <211>362  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1029  
 Pro Val Asn His Gln Leu Leu Arg Glu Tyr Tyr Pro Ala Thr Gln Ala  
 1 5 10 15  
 Gly Phe Ser Phe Thr Ser Ala Leu Gly Gly Asp Gly Ile Asp Leu Arg  
 20 25 30  
 Val Ser Gly Tyr Thr Thr Thr Val Pro Ala Leu Leu Asn Ser Ile Leu  
 35 40 45  
 Thr Ser Leu Pro Asn Leu Glu Ile Arg Tyr Glu Thr Phe Leu Val Tyr  
 50 55 60  
 Lys Lys Gln Leu Leu Glu Leu Tyr Gln Gly Ala Leu Leu Asn Cys Pro  
 65 70 75 80  
 Val Arg Ser Gly Leu Asp Glu Leu Ala Ser Gln Val Met Lys Glu Thr  
 85 90 95  
 Tyr Ser Asn Thr Thr Lys Leu Ser Ala Leu Glu Lys Leu Ser Phe Ser  
 100 105 110  
 Glu Phe Gln Ala Phe Ala Ser Asn Leu Phe Asn Ser Val His Leu Glu  
 115 120 125  
 Val Met Val Leu Gly Asn Leu Ser Glu Gln Gln Lys Lys Asp Tyr Leu  
 130 135 140  
 Glu Met Leu Gln Val Phe Thr Ala Ser Arg Ser Ser His Ala Thr Lys  
 145 150 155 160  
 Pro Phe Tyr Tyr Glu Leu Gln Ser Gln Glu Ile Ser Glu Ile His His  
 165 170 175  
 Asp Tyr Pro Leu Thr Ala Asn Gly Met Leu Leu Leu Leu Gln Asp Lys  
 180 185 190  
 Ser Ser Pro Ser Ile Gln Gly Lys Val Cys Ala Glu Met Leu Phe Glu  
 195 200 205  
 Trp Leu His His Ile Thr Phe Glu Glu Leu Arg Thr Gln Gln Gln Leu  
 210 215 220  
 Gly Tyr Met Val Gly Ala Arg Tyr Arg Glu Phe Ala Ser Arg Pro Phe  
 225 230 235 240  
 Gly Phe Leu Tyr Ile Arg Ser Asp Ala Tyr Ser Pro Glu Glu Leu Leu  
 245 250 255  
 Ala Lys Thr Ser Leu Phe Leu Asn Lys Val Ser Ala Ser Pro Glu Lys  
 260 265 270  
 Phe Gly Ile Ser Gln Glu Lys Phe Ala Asn Ile Arg Lys Ala Tyr Ile  
 275 280 285  
 Asn Lys Ile Leu Glu Pro Glu His Ser Leu Asp Met Met Asn Ser Ala  
 290 295 300  
 Leu Phe Ser Leu Ala Phe Glu Arg Pro Phe Val Glu Phe Ser Thr Pro  
 305 310 315 320  
 Asp Leu Lys Ile Ala Ile Ala Glu Thr Leu Thr Tyr Glu Glu Phe Leu  
 325 330 335  
 Lys Tyr Cys Gln Cys Phe Leu Ser Asn Glu Leu Gly Thr Gln Thr Ser  
 340 345 350  
 Val Tyr Ile Arg Gly Thr Gln Lys Thr Ser  
 355 360  
 <210>1030  
 <211>945  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1030  
 Ile Tyr Arg Ala Ile Tyr Met Gln Phe Ser Arg Tyr Leu Arg Tyr Ala  
 1 5 10 15

Phe Asp Asn Gln Tyr Leu Pro Glu Pro Leu Tyr Gln Lys Phe Ser Val  
 20 25 30  
 Phe His Gln Asn Tyr Ile Asp Ala Thr Lys Lys Ala Ala Ala Asp  
 35 40 45  
 Gln Ala Glu Val Leu Cys Leu Gln Trp Val Lys Val Ile Ile Glu Asp  
 50 55 60  
 Leu Lys Asn Pro Phe Ile Phe Pro Pro Tyr His Lys Lys Ile Arg Ala  
 65 70 75 80  
 Pro Ile Asp Leu Phe Arg Leu Ser Ile Asp Phe Phe Ser Leu Val Ile  
 85 90 95  
 Asp Asp Lys Asn Ser Arg Ile Leu Asn Leu His Arg Leu Lys Glu Ile  
 100 105 110  
 Glu Glu Tyr Ile Ala Arg Gly Asp Asn Val Val Leu Leu Ala Asn His  
 115 120 125  
 Gln Thr Glu Cys Asp Pro Gln Leu Met Tyr Tyr Ala Leu Gly Lys Thr  
 130 135 140  
 His Pro Glu Leu Met Glu Asn Met Ile Phe Val Ala Gly Asp Arg Val  
 145 150 155 160  
 Thr Ser Asp Pro Leu Ala Arg Pro Phe Ser Met Gly Cys Asp Leu Leu  
 165 170 175  
 Cys Ile Tyr Ser Lys Arg His Ile Ala Thr Pro Pro Glu Leu Arg Glu  
 180 185 190  
 Glu Lys Leu Leu His Asn Gln Lys Ser Met Gln Ile Leu Lys Thr Leu  
 195 200 205  
 Leu Asn Glu Gly Gly Lys Phe Ile Tyr Val Ala Pro Ala Gly Gly Arg  
 210 215 220  
 Asp Arg Lys Asn Ala Glu Gly Arg Leu Tyr Pro Ser Glu Phe Ser Pro  
 225 230 235 240  
 Glu Ser Ile Glu Val Phe Arg Leu Leu Ala Lys Ala Ser Asn Gln Thr  
 245 250 255  
 Thr His Phe Tyr Pro Phe Ala Leu Lys Thr Tyr Asp Ile Leu Pro Pro  
 260 265 270  
 Pro Pro Lys Ile Glu Asn Ala Ile Gly Glu Gln Arg Ala Ile Phe Phe  
 275 280 285  
 Ala Pro Val Phe Phe Asn Phe Gly Ala Glu Leu Phe Phe Asp Ala Leu  
 290 295 300  
 Cys Ser Lys Glu Glu Leu Ile His Cys Asp Lys His Ala Gln Arg Thr  
 305 310 315 320  
 Leu Arg Ala Glu Lys Val Phe Ser Ile Cys Lys Lys Ser Ile Arg Gly  
 325 330 335  
 Ile Val Arg Cys Phe Gly Asn Phe Phe Val Pro Ile Leu Ile Cys Thr  
 340 345 350  
 Ser Leu Ser Ile Thr Ser Cys Glu Gln Gln Phe Lys Val Val Pro Asn  
 355 360 365  
 Gln Cys Pro Leu Gln Val Ser Thr Pro Ala Ala Ala Asp Gln Lys Ile  
 370 375 380  
 Glu Lys Ile Ile Cys Ser Asn Gly Leu Pro Leu Leu Ile Ile Ser Asp  
 385 390 395 400  
 Pro Asn Leu Pro Thr Ser Gly Ala Ala Leu Leu Val Lys Thr Gly Asn  
 405 410 415  
 Asn Ala Asp Pro Glu Glu Tyr Pro Gly Met Ala His Phe Thr Glu His  
 420 425 430  
 Cys Val Phe Leu Gly Asn Glu Lys Tyr Pro Glu Val Ser Gly Phe Pro  
 435 440 445  
 Gly Phe Leu Ser Glu Asn Asn Gly Val His Asn Ala Phe Thr Tyr Pro  
 450 455 460  
 Asn Lys Thr Val Phe Val Phe Ser Val Glu His Ser Ala Phe Ser Asp  
 465 470 475 480  
 Ala Leu Asp Gln Phe Val His Leu Phe Ile Asn Pro Lys Phe Arg Gln  
 485 490 495  
 Glu Asp Leu Asp Arg Glu Lys Tyr Ala Val His Gln Glu Phe Ala Ala  
 500 505 510  
 His Pro Leu Ser Asp Gly Arg Arg Val His Arg Ile Gln Gln Leu Val  
 515 520 525

Ala Pro Gln Gly His Pro Cys Ala Arg Phe Gly Cys Gly Asn Ala Ser  
 530 535 540  
 Thr Leu Thr Pro Val Thr Thr Glu Lys Met Ala Glu Trp Phe Lys Leu  
 545 550 555 560  
 His Tyr Ser Pro Glu Asn Met Cys Ala Ile Ala Tyr Thr Ser Ala Pro  
 565 570 575  
 Leu Ser Lys Ala Lys Lys Gln Phe Ser Lys Ile Phe Ser Gln Ile Pro  
 580 585 590  
 Arg Ser Lys Asn Tyr Glu Arg Gln Glu Pro Phe Leu Pro Ser Gly Asp  
 595 600 605  
 Thr Ser Ser Leu Lys Asn Leu Tyr Ile Asn Gln Ala Ile Gln Pro Thr  
 610 615 620  
 Ser Asn Leu Glu Ile Tyr Trp His Ile Tyr Glu Ser Ser His Pro Ile  
 625 630 635 640  
 Pro Leu Gly Cys Tyr Lys Ala Leu Ala Glu Val Leu Arg Asn Glu Ser  
 645 650 655  
 Lys Asn Ser Leu Val Ser Leu Leu Lys Asn Glu Gln Leu Ile Thr Asp  
 660 665 670  
 Leu Asp Val Glu Phe Phe Arg Ser Ser Leu Asn Thr Gly Glu Phe Tyr  
 675 680 685  
 Ile Ser Tyr Glu Leu Thr Glu Lys Gly Asp Lys His Tyr Ser Gln Val  
 690 695 700  
 Ile Asp Ser Thr Phe Gln Tyr Leu Arg Tyr Ile Gln Glu His Gly Ile  
 705 710 715 720  
 Pro Asn Tyr Thr Leu Glu Glu Ile Ser Thr Ile Asn Ala Leu Asn Tyr  
 725 730 735  
 Cys Tyr Ser Ser Lys Ser Pro Leu Phe Asp Leu Leu Cys Lys Gln Ile  
 740 745 750  
 Val Ser Leu Gly Asn Glu Asp Leu Ser Thr Tyr Pro Tyr His Ser Leu  
 755 760 765  
 Val Tyr Pro Lys Tyr Ser Ser Glu Asp Glu Ser Ala Leu Leu Asn Leu  
 770 775 780  
 Val Ser Asp Pro Glu Gln Ala Arg Phe Val Leu Ser Ser Lys Asn Ser  
 785 790 795 800  
 Glu His Trp Glu Glu Ala Thr Gln Leu His Asp Pro Ile Phe Asp Met  
 805 810 815  
 Thr Tyr Tyr Val Lys Ala Leu Asp Gly Val Gln Asp Tyr Gly Lys Val  
 820 825 830  
 Gln Ser Leu Lys Pro Ile Ala Leu Pro Lys Pro Asn Leu Phe Ile Pro  
 835 840 845  
 Lys Glu Val Thr Leu Pro Gly Val His Leu Leu Lys Lys Gln Glu Phe  
 850 855 860  
 Pro Phe Ala Pro Ala Leu Ser Tyr Gln Asp Asp Lys Leu Thr Leu Tyr  
 865 870 875 880  
 His Cys Glu Asp His Tyr Tyr Thr Ala Pro Lys Leu Ser Ser Gln Ile  
 885 890 895  
 Arg Ile Arg Ser Pro Gln Ile Ser Arg Ser Ser Pro Gln Phe Leu Val  
 900 905 910  
 Ala Thr Glu Leu Tyr Cys Leu Ala Cys Glu Pro Ser Ala Phe Glu Gly  
 915 920 925  
 Val Leu Ser Arg Asn Ala Ser Trp Phe Phe Phe Tyr Phe Cys Phe Arg  
 930 935 940  
 Trp  
 945  
 <210>1031  
 <211>521  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1031  
 Ile Gly Thr Arg Lys Val Met Glu Asn Glu Ile Leu Leu Asn Ile Glu  
 1 5 10 15  
 Ser Lys Glu Ile Arg Tyr Ala His Leu Lys Asn Gly Gln Leu Phe Asp  
 20 25 30  
 Leu Thr Ile Glu Arg Lys Lys Val Arg Gln Leu Lys Gly Asn Ile Tyr

35 40 45  
 Arg Gly Arg Val Thr Asn Ile Leu Arg Asn Ile Gln Ser Ala Phe Ile  
 50 55 60  
 Asn Ile Asp Glu Arg Glu Asn Gly Phe Ile His Ile Ser Asp Ile Leu  
 65 70 75 80  
 Glu Asn Ser Lys Lys Phe Glu Gln Met Phe Asp Met Asp Val Asp Ala  
 85 90 95  
 Leu Pro Glu Glu Ala Ser Glu Ala Pro Leu Leu Ser Ser Glu Glu Ala  
 100 105 110  
 Pro Ile Glu Glu Phe Leu Lys Leu Asp Ser Pro Val Leu Val Gln Val  
 115 120 125  
 Val Lys Glu Pro Ile Gly Ser Lys Gly Ala Arg Leu Thr Ser Asn Ile  
 130 135 140  
 Ser Ile Pro Gly Arg Tyr Leu Val Leu Leu Pro Asn Ser Pro His Arg  
 145 150 155 160  
 Gly Val Ser Arg Lys Ile Glu Asp Pro His Met Arg Glu Gln Leu Lys  
 165 170 175  
 Gln Leu Ile Arg Ser Phe Glu Met Pro Gln Asp Met Gly Leu Ile Cys  
 180 185 190  
 Arg Thr Ala Ser Thr Thr Ala Ser Thr Glu Ala Leu Ile Asn Glu Ala  
 195 200 205  
 His Asp Leu Leu Leu Thr Trp Lys Thr Ile Leu Glu Lys Phe Tyr Ser  
 210 215 220  
 Thr Glu Gln Pro Cys Leu Leu Tyr Ser Glu Thr Asp Ile Leu Lys Lys  
 225 230 235 240  
 Ala Val Ile Thr Cys Ile Asp Lys Asn Tyr Lys Arg Leu Leu Ile Asp  
 245 250 255  
 Asp Tyr Ala Thr Tyr Gln Lys Cys Lys His Met Leu Lys Lys Tyr Ser  
 260 265 270  
 Pro Asp Ala Ser Ile Lys Ile Glu Tyr Tyr Arg Asp Ser Ile Pro Met  
 275 280 285  
 Phe Glu Arg Phe Asn Ile Glu Lys Glu Ile Asp Lys Ala Thr Arg Arg  
 290 295 300  
 Lys Ile Trp Leu Ser Ser Gly Gly Tyr Leu Phe Phe Asp Lys Thr Glu  
 305 310 315 320  
 Ala Met His Thr Ile Asp Val Asn Ser Gly Arg Ser Thr Gln Leu Glu  
 325 330 335  
 Ser Gly Val Glu Glu Thr Leu Val Gln Ile Asn Leu Glu Ala Ala Glu  
 340 345 350  
 Glu Ile Ala Arg Gln Leu Arg Leu Arg Asn Val Gly Gly Leu Val Ile  
 355 360 365  
 Ile Asp Phe Ile Asp Met Lys Ser Arg Lys Asn Gln Arg Arg Val Leu  
 370 375 380  
 Glu Arg Leu Lys Glu His Met Lys Tyr Asp Ala Ala Arg Cys Thr Ile  
 385 390 395 400  
 Leu Ser Met Ser Glu Phe Gly Leu Val Glu Met Thr Arg Gln Arg Asn  
 405 410 415  
 Arg Glu Ser Leu Met Gln Thr Leu Phe Thr Leu Cys Pro Tyr Cys Ser  
 420 425 430  
 Gly Asn Ala Ile Ile Lys Thr Pro Glu Ser Val Val Ile Glu Ile Glu  
 435 440 445  
 Arg Asp Leu Lys Lys Val Ile Asn His Lys Glu His Ser His Leu Cys  
 450 455 460  
 Leu Val Val His Pro Glu Ile Ala Ser Tyr Met Lys Gln Glu Asn Asp  
 465 470 475 480  
 Asp Asn Glu Met Ile Asn Leu Ala Lys Gln Leu Lys Ala Lys Leu Gln  
 485 490 495  
 Ile Asn Thr Ser Asp Ser Val His Leu Asn His Tyr Gln Phe Phe Ser  
 500 505 510  
 Leu Ile Thr Gly Glu Ser Ile Asp Leu  
 515 520  
 <310>1032  
 <311>176  
 <212>PRT

## &lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1032

```

Ser Leu Ser Leu Val Ser Tyr Leu Ser Asn Pro Gln Lys Ala Leu Val
 1              5              10              15
Leu Gly Ser Lys Gly Phe Ser Met Asp Cys Val Asp Asn Leu Lys Leu
      20              25              30
Tyr Ile Phe Arg Leu Lys Leu Pro Gly Asp Thr Glu Arg Ile Ser Tyr
      35              40              45
Ser Ile Ser Pro Glu Tyr Ile Arg Glu Lys Gly Glu Glu Glu Leu Leu
      50              55              60
Asn Ser Pro Ile Glu Val Glu Gly Ser Leu Gly Arg Ile Asp Ser Asp
      65              70              75              80
Gln Trp Ile Leu Ser Leu Ser Leu Lys Thr Gln Leu Gly Leu Cys Cys
      85              90              95
Pro Val Cys Asn Asn Phe Phe Ser His Ser Val Cys Leu Pro Asp Leu
      100              105              110
Gln Arg Val Ile Ser His Asp Glu Val Gly Ser Gly Val Phe Asp Cys
      115              120              125
Arg Pro Leu Ile Arg Gln Glu Leu Leu Leu Glu Ser Asp Cys Phe Glu
      130              135              140
Glu Cys Ser Gly Gln Gly Cys Pro Glu Arg Lys Asn Ile Leu Lys Phe
      145              150              155              160
Leu Glu Asp Arg Lys Lys His Glu Gly Asn Asn Pro Phe Glu Tyr Leu
      165              170              175

```

&lt;210&gt;1033

&lt;211&gt;213

&lt;212&gt;PRT

## &lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1033

```

Met Glu Val Gln Ile Gly Ile Asp Leu Met Gly Gly Asp His Ser Pro
 1              5              10              15
Leu Val Val Trp Gln Val Leu Val Asp Val Leu Lys Ser Gln Ser Ser
      20              25              30
Thr Ile Pro Phe Ala Phe Thr Leu Phe Ala Ser Glu Glu Ile Arg Lys
      35              40              45
Gln Ile Gln Glu Glu Phe Ile Ser Asp Leu Pro Gln Glu Lys Phe Pro
      50              55              60
Lys Ile Ile Ser Ala Glu Asn Phe Val Ala Met Glu Asp Ser Pro Leu
      65              70              75              80
Ala Ala Ile Arg Lys Lys Ser Ser Ser Met Ala Leu Gly Leu Asp Tyr
      85              90              95
Leu Gln Glu Asp Lys Leu Asp Ala Phe Ile Ser Thr Gly Asn Thr Gly
      100              105              110
Ala Leu Val Thr Leu Ala Arg Ala Lys Ile Pro Leu Phe Pro Ala Val
      115              120              125
Ser Arg Pro Ala Leu Leu Val Cys Val Pro Thr Met Arg Gly His Ala
      130              135              140
Val Ile Leu Asp Val Gly Ala Asn Ile Ser Val Lys Pro Glu Glu Met
      145              150              155              160
Val Gly Phe Ala Arg Met Gly Leu Ala Tyr Arg Gln Cys Leu Gly Asp
      165              170              175
Ser Lys Ile Pro Thr Ile Gly Leu Leu Asn Ile Gly Ser Glu Glu Arg
      180              185              190
Lys Gly Thr Glu Ala His Arg Gln Thr Phe Arg Met Leu Arg Glu Thr
      195              200              205
Phe Gly Glu Leu Ser
      210

```

&lt;210&gt;1034

&lt;211&gt;127

&lt;212&gt;PRT

## &lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1034

```

Arg Tyr Gly Ser Pro Ser Pro Asp Ile Pro Tyr Ala Ala Arg Asp Ile
 1              5              10              15

```



Trp Arg Thr Phe Leu Gly Asn Ile Glu Ser Gly Ala Val Phe Asp Gly  
 20 25 30  
 Ala Ala Asp Ile Val Val Thr Asp Gly Phe Thr Gly Asn Ile Phe Leu  
 35 40 45  
 Lys Thr Ala Glu Gly Val Phe Glu Phe Leu Gln Arg Ile Leu Gly Asp  
 50 55 60  
 Lys Leu Glu Ala Asp Ile Gln Arg Arg Leu Asp Tyr Thr Phe Tyr Pro  
 65 70 75 80  
 Gly Ser Val Val Cys Gly Leu Ser Lys Leu Val Ile Lys Cys His Gly  
 85 90 95  
 Lys Ala Cys Gly Ser Ser Leu Phe His Gly Ile Leu Gly Ser Ile Asn  
 100 105 110  
 Leu Ala Gln Ala Arg Leu Cys Lys Arg Ile Leu Ser Asn Leu Ile  
 115 120 125  
 <210>1035  
 <211>1617  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1035  
 Thr Pro Leu Arg Phe Lys Val Ala Met Val Ala Lys Lys Thr Val Arg  
 1 5 10 15  
 Ser Tyr Arg Ser Ser Phe Ser His Ser Val Ile Val Ala Ile Leu Ser  
 20 25 30  
 Ala Gly Ile Ala Phe Glu Ala His Ser Leu His Ser Ser Glu Leu Asp  
 35 40 45  
 Leu Gly Val Phe Asn Lys Gln Phe Glu Glu His Ser Ala His Val Glu  
 50 55 60  
 Glu Ala Gln Thr Ser Val Leu Lys Gly Ser Asp Pro Val Asn Pro Ser  
 65 70 75 80  
 Gln Lys Glu Ser Glu Lys Val Leu Tyr Thr Gln Val Pro Leu Thr Gln  
 85 90 95  
 Gly Ser Ser Gly Glu Ser Leu Asp Leu Ala Asp Ala Asn Xaa Leu Glu  
 100 105 110  
 His Phe Gln His Leu Phe Glu Glu Thr Thr Val Phe Gly Ile Asp Gln  
 115 120 125  
 Lys Leu Val Trp Ser Asp Leu Asp Thr Arg Asn Phe Ser Gln Pro Thr  
 130 135 140  
 Gln Glu Pro Asp Thr Ser Asn Ala Val Ser Glu Lys Ile Ser Ser Asp  
 145 150 155 160  
 Thr Lys Glu Asn Arg Lys Asp Leu Glu Thr Glu Asp Pro Ser Lys Lys  
 165 170 175  
 Ser Gly Leu Lys Glu Val Ser Ser Asp Leu Pro Lys Ser Pro Glu Thr  
 180 185 190  
 Ala Val Ala Ala Ile Ser Glu Asp Leu Glu Ile Ser Glu Asn Ile Ser  
 195 200 205  
 Ala Arg Asp Pro Leu Gln Gly Leu Ala Phe Phe Tyr Lys Asn Thr Ser  
 210 215 220  
 Ser Gln Ser Ile Ser Glu Lys Asp Ser Ser Phe Gln Gly Ile Ile Phe  
 225 230 235 240  
 Ser Gly Ser Gly Ala Asn Ser Gly Leu Gly Phe Glu Asn Leu Lys Ala  
 245 250 255  
 Pro Lys Ser Gly Ala Ala Val Tyr Ser Asp Arg Asp Ile Val Phe Glu  
 260 265 270  
 Asn Leu Val Lys Gly Leu Ser Phe Ile Ser Cys Glu Ser Leu Glu Asp  
 275 280 285  
 Gly Ser Ala Ala Gly Val Asn Ile Val Val Thr His Cys Gly Asp Val  
 290 295 300  
 Thr Leu Thr Asp Cys Ala Thr Gly Leu Asp Leu Glu Ala Leu Arg Leu  
 305 310 315 320  
 Val Lys Asp Phe Ser Arg Gly Gly Ala Val Phe Thr Ala Arg Asn His  
 325 330 335  
 Glu Val Gln Asn Leu Ala Gly Gly Ile Leu Ser Val Val Gly Asn  
 340 345 350  
 Lys Gly Ala Ile Val Val Glu Lys Asn Ser Ala Glu Lys Ser Asn Gly

|   |     |     |
|---|-----|-----|
| 355   | 360 | 365 |
| Gly Ala Phe Ala Cys Gly Ser Phe Val Tyr Ser Asn Asn Glu Asn Thr |     |     |
| 370   | 375 | 380 |
| Ala Leu Trp Lys Glu Asn Gln Ala Leu Ser Gly Gly Ala Ile Ser Ser |     |     |
| 385   | 390 | 395 |
| Ala Ser Asp Ile Asp Ile Gln Gly Asn Cys Ser Ala Ile Glu Phe Ser |     | 400 |
| 405   | 410 | 415 |
| Gly Asn Gln Ser Leu Ile Ala Leu Gly Glu His Ile Gly Leu Thr Asp |     |     |
| 420   | 425 | 430 |
| Phe Val Gly Gly Gly Ala Leu Ala Gln Gly Thr Leu Thr Leu Arg     |     |     |
| 435   | 440 | 445 |
| Asn Asn Ala Val Val Gln Cys Val Lys Asn Thr Ser Lys Thr His Gly |     |     |
| 450   | 455 | 460 |
| Gly Ala Ile Leu Ala Gly Thr Val Asp Leu Asn Glu Thr Ile Ser Glu |     | 480 |
| 465   | 470 | 475 |
| Val Ala Phe Lys Gln Asn Thr Ala Ala Leu Thr Gly Gly Ala Leu Ser |     |     |
| 485   | 490 | 495 |
| Ala Asn Asp Lys Val Ile Ile Ala Asn Asn Phe Gly Glu Ile Leu Phe |     |     |
| 500   | 505 | 510 |
| Glu Gln Asn Glu Val Arg Asn His Gly Gly Ala Ile Tyr Cys Gly Cys |     |     |
| 515   | 520 | 525 |
| Arg Ser Asn Pro Lys Leu Glu Gln Lys Asa Ser Gly Glu Asn Ile Asn |     |     |
| 530   | 535 | 540 |
| Ile Ile Gly Asn Ser Gly Ala Ile Thr Phe Leu Lys Asn Lys Ala Ser |     |     |
| 545   | 550 | 555 |
| Val Leu Glu Val Met Thr Gln Ala Glu Asp Tyr Ala Gly Gly Gly Ala |     |     |
| 565   | 570 | 575 |
| Leu Trp Gly His Asn Val Leu Leu Asp Ser Asn Ser Gly Asn Ile Gln |     |     |
| 580   | 585 | 590 |
| Phe Ile Gly Asn Ile Gly Gly Arg Asn Phe Trp Ile Gly Glu Tyr Val |     |     |
| 595   | 600 | 605 |
| Gly Gly Gly Ala Ile Leu Ser Thr Asp Arg Val Thr Ile Ser Asn Asn |     |     |
| 610   | 615 | 620 |
| Ser Gly Asp Val Val Phe Lys Gly Asn Lys Gly Gln Cys Leu Ala Gln |     |     |
| 625   | 630 | 635 |
| Lys Tyr Val Ala Pro Gln Glu Thr Ala Pro Val Gln Ser Asp Ala Ser |     |     |
| 645   | 650 | 655 |
| Ser Thr Asn Lys Asp Glu Lys Ser Leu Asn Ala Cys Ser His Gly Asp |     |     |
| 660   | 665 | 670 |
| His Tyr Pro Pro Lys Thr Val Glu Glu Glu Val Pro Pro Ser Leu Leu |     |     |
| 675   | 680 | 685 |
| Glu Glu His Pro Val Val Ser Ser Thr Asp Ile Arg Gly Gly Gly Ala |     |     |
| 690   | 695 | 700 |
| Ile Leu Ala Gln His Ile Phe Ile Thr Asp Asn Thr Gly Asn Leu Arg |     |     |
| 705   | 710 | 715 |
| Phe Ser Gly Asn Leu Gly Gly Gly Glu Glu Ser Ser Thr Val Gly Asp |     |     |
| 725   | 730 | 735 |
| Leu Ala Ile Val Gly Gly Gly Ala Leu Leu Ser Thr Asn Glu Val Asn |     |     |
| 740   | 745 | 750 |
| Val Cys Ser Asn Gln Asn Val Val Phe Ser Asp Asn Val Thr Ser Asn |     |     |
| 755   | 760 | 765 |
| Gly Cys Asp Ser Gly Gly Ala Ile Leu Ala Lys Lys Val Asp Ile Ser |     |     |
| 770   | 775 | 780 |
| Ala Asn His Ser Val Glu Phe Val Ser Asn Gly Ser Gly Lys Phe Gly |     |     |
| 785   | 790 | 795 |
| Gly Ala Val Cys Ala Leu Asn Glu Ser Val Asn Ile Thr Asp Asn Gly |     |     |
| 805   | 810 | 815 |
| Ser Ala Val Ser Phe Ser Lys Asn Arg Thr Arg Leu Gly Gly Ala Gly |     |     |
| 820   | 825 | 830 |
| Val Ala Ala Pro Gln Gly Ser Val Thr Ile Cys Gly Asn Gln Gly Asn |     |     |
| 835   | 840 | 845 |
| Ile Ala Phe Lys Glu Asn Phe Val Phe Gly Ser Glu Asn Gln Arg Ser |     |     |
| 850   | 855 | 860 |
| Gly Gly Gly Ala Ile Ile Ala Asn Ser Ser Val Asn Ile Gln Asp Asn |     |     |

|   |      |      |      |
|---|------|------|------|
| 865   | 870  | 875  | 880  |
| Ala Gly Asp Ile Leu Phe Val Ser Asn Ser Thr Gly Ser Tyr Gly Gly |      |      |      |
| 885   | 890  | 895  |      |
| Ala Ile Phe Val Gly Ser Leu Val Ala Ser Glu Gly Ser Asn Pro Arg |      |      |      |
| 900   | 905  | 910  |      |
| Thr Leu Thr Ile Thr Gly Asn Ser Gly Asp Ile Leu Phe Ala Lys Asn |      |      |      |
| 915   | 920  | 925  |      |
| Ser Thr Gln Thr Ala Ala Ser Leu Ser Glu Lys Asp Ser Phe Gly Gly |      |      |      |
| 930   | 935  | 940  |      |
| Gly Ala Ile Tyr Thr Gln Asn Leu Lys Ile Val Lys Asn Ala Gly Asn |      |      |      |
| 945   | 950  | 955  | 960  |
| Val Ser Phe Tyr Gly Asn Arg Ala Pro Ser Gly Ala Gly Val Gln Ile |      |      |      |
| 965   | 970  | 975  |      |
| Ala Asp Gly Gly Thr Val Cys Leu Glu Ala Phe Gly Gly Asp Ile Leu |      |      |      |
| 980   | 985  | 990  |      |
| Phe Glu Gly Asn Ile Asn Phe Asp Gly Ser Phe Asn Ala Ile His Leu |      |      |      |
| 995   | 1000 | 1005 |      |
| Cys Gly Asn Asp Ser Lys Ile Val Glu Leu Ser Ala Val Gln Asp Lys |      |      |      |
| 1010  | 1015 | 1020 |      |
| Asn Ile Ile Phe Gln Asp Ala Ile Thr Tyr Glu Glu Asn Thr Ile Arg |      |      |      |
| 1025  | 1030 | 1035 | 1040 |
| Gly Leu Pro Asp Lys Asp Val Ser Pro Leu Ser Ala Pro Ser Leu Ile |      |      |      |
| 1045  | 1050 | 1055 |      |
| Phe Asn Ser Lys Pro Gln Asp Asp Ser Ala Gln His His Glu Gly Thr |      |      |      |
| 1060  | 1065 | 1070 |      |
| Ile Arg Phe Ser Arg Gly Val Pro Lys Ile Pro Gln Yle Ala Ala Ile |      |      |      |
| 1075  | 1080 | 1085 |      |
| Gln Glu Gly Thr Leu Ala Leu Ser Gln Asn Ala Glu Leu Trp Leu Ala |      |      |      |
| 1090  | 1095 | 1100 |      |
| Gly Leu Lys Gln Glu Thr Gly Ser Ser Ile Val Leu Ser Ala Gly Ser |      |      |      |
| 1105  | 1110 | 1115 | 1120 |
| Ile Leu Arg Ile Phe Asp Ser Gln Val Asp Ser Ser Ala Pro Leu Pro |      |      |      |
| 1125  | 1130 | 1135 |      |
| Thr Glu Asn Lys Glu Glu Thr Leu Val Ser Ala Gly Val Gln Ile Asn |      |      |      |
| 1140  | 1145 | 1150 |      |
| Met Ser Ser Pro Thr Pro Asn Lys Asp Lys Ala Val Asp Thr Pro Val |      |      |      |
| 1155  | 1160 | 1165 |      |
| Leu Ala Asp Ile Ile Ser Ile Thr Val Asp Leu Ser Ser Phe Val Pro |      |      |      |
| 1170  | 1175 | 1180 |      |
| Glu Gln Asp Gly Thr Leu Pro Leu Pro Pro Glu Ile Ile Ile Pro Lys |      |      |      |
| 1185  | 1190 | 1195 | 1200 |
| Gly Thr Lys Leu His Ser Asn Ala Ile Asp Leu Lys Ile Ile Asp Pro |      |      |      |
| 1205  | 1210 | 1215 |      |
| Thr Asn Val Gly Tyr Glu Asn His Ala Leu Leu Ser Ser His Lys Asp |      |      |      |
| 1220  | 1225 | 1230 |      |
| Ile Pro Leu Ile Ser Leu Lys Thr Ala Glu Gly Met Thr Gly Thr Pro |      |      |      |
| 1235  | 1240 | 1245 |      |
| Thr Ala Asp Ala Ser Leu Ser Asn Ile Lys Ile Asp Val Ser Leu Pro |      |      |      |
| 1250  | 1255 | 1260 |      |
| Ser Ile Thr Pro Ala Thr Tyr Gly His Thr Gly Val Trp Ser Glu Ser |      |      |      |
| 1265  | 1270 | 1275 | 1280 |
| Lys Met Glu Asp Gly Arg Leu Val Val Gly Trp Gln Pro Thr Gly Tyr |      |      |      |
| 1285  | 1290 | 1295 |      |
| Lys Leu Asn Pro Glu Lys Gln Gly Ala Leu Val Leu Asn Asn Leu Trp |      |      |      |
| 1300  | 1305 | 1310 |      |
| Ser His Tyr Thr Asp Leu Arg Ala Leu Lys Gln Glu Ile Phe Ala His |      |      |      |
| 1315  | 1320 | 1325 |      |
| His Thr Ile Ala Gln Arg Met Glu Leu Asp Phe Ser Thr Asn Val Trp |      |      |      |
| 1330  | 1335 | 1340 |      |
| Gly Ser Gly Leu Gly Val Glu Asp Cys Gln Asn Ile Gly Glu Phe     |      |      |      |
| 1345  | 1350 | 1355 | 1360 |
| Asp Gly Phe Lys His Leu Thr Gly Tyr Ala Leu Gly Leu Asp Thr     |      |      |      |
| 1365  | 1370 | 1375 |      |
| Gln Leu Val Glu Asp Phe Leu Ile Gly Gly Cys Phe Ser Gln Phe Phe |      |      |      |

|   |      |      |      |      |      |
|---|------|------|------|------|------|
|   | 1380 |      | 1385 |      | 1390 |
| Gly Lys Thr Glu Ser Gln Ser Tyr Lys Ala Lys Asn Asp Val Lys Ser |      |      |      |      |      |
| 1395  |      | 1400 |      | 1405 |      |
| Tyr Met Gly Ala Ala Tyr Ala Gly Ile Leu Ala Gly Pro Trp Leu Ile |      |      |      |      |      |
| 1410  |      | 1415 |      | 1420 |      |
| Lys Gly Ala Phe Val Tyr Gly Asn Ile Asn Asn Asp Leu Thr Thr Asp |      |      |      |      |      |
| 1425  |      | 1430 |      | 1435 | 1440 |
| Tyr Gly Thr Leu Gly Ile Ser Thr Gly Ser Trp Ile Gly Lys Gly Phe |      |      |      |      |      |
|   | 1445 |      | 1450 |      | 1455 |
| Ile Ala Gly Thr Ser Ile Asp Tyr Arg Tyr Ile Val Asn Pro Arg Arg |      |      |      |      |      |
|   | 1460 |      | 1465 |      | 1470 |
| Phe Ile Ser Ala Ile Val Ser Thr Val Val Pro Phe Val Glu Ala Glu |      |      |      |      |      |
|   | 1475 |      | 1480 |      | 1485 |
| Tyr Val Arg Ile Asp Leu Pro Glu Ile Ser Glu Gln Gly Lys Glu Val |      |      |      |      |      |
|   | 1490 |      | 1495 |      | 1500 |
| Arg Thr Phe Gln Lys Thr Arg Phe Glu Asn Val Ala Ile Pro Phe Gly |      |      |      |      |      |
| 1505  |      | 1510 |      | 1515 | 1520 |
| Phe Ala Leu Glu His Ala Tyr Ser Arg Gly Ser Arg Ala Glu Val Asn |      |      |      |      |      |
|   | 1525 |      | 1530 |      | 1535 |
| Ser Val Gln Leu Ala Tyr Val Phe Asp Val Tyr Arg Lys Gly Pro Val |      |      |      |      |      |
|   | 1540 |      | 1545 |      | 1550 |
| Ser Leu Ile Thr Leu Lys Asp Ala Ala Tyr Ser Trp Lys Ser Tyr Gly |      |      |      |      |      |
|   | 1555 |      | 1560 |      | 1565 |
| Val Asp Ile Pro Cys Lys Ala Trp Lys Ala Arg Leu Ser Asn Asn Thr |      |      |      |      |      |
|   | 1570 |      | 1575 |      | 1580 |
| Glu Trp Asn Ser Tyr Leu Ser Thr Tyr Leu Ala Phe Asn Tyr Glu Trp |      |      |      |      |      |
| 1585  |      | 1590 |      | 1595 | 1600 |
| Arg Glu Asp Leu Ile Ala Tyr Asp Phe Asn Gly Gly Ile Arg Ile Ile |      |      |      |      |      |
|   | 1605 |      | 1610 |      | 1615 |
| Phe   |      |      |      |      |      |

&lt;210&gt;1036

&lt;211&gt;504

&lt;213&gt;PRT

&lt;313&gt;Chlamydia pneumoniae

&lt;400&gt;1036

|   |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| Gln Ser Ile Leu Glu Ser Ile Ile Lys Tyr Phe Tyr Leu Ile His Asn |     |     |     |     |     |
| 1   |     | 5   |     | 10  | 15  |
| Ser Lys Met His Met Ser Asn Pro Ile Ser Leu Phe Ser Pro Ala Glu |     |     |     |     |     |
|   | 20  |     | 25  |     | 30  |
| Leu Ile Ala Lys Tyr Asn Leu Ile Pro Lys Thr Ser Pro Ile Tyr Pro |     |     |     |     |     |
|   | 35  |     | 40  |     | 45  |
| Arg Arg Thr Glu Leu Ile Ile Leu Glu Glu Asn Ala Cys Gln Thr Arg |     |     |     |     |     |
|   | 50  |     | 55  |     | 60  |
| Leu Thr Asn Val Ala Gln Val Leu His Pro Ser Ser Leu Phe Ser Met |     |     |     |     |     |
|   | 65  |     | 70  |     | 75  |
| Ser Lys Lys Ile Leu Asn Pro Cys Gly Cys Ser Gly Gly Pro Leu Cys |     |     |     |     |     |
|   | 85  |     | 90  |     | 95  |
| Trp Val Ile Leu Asn Ile Leu Ala Phe Ile Ile Thr Ser Val Leu Phe |     |     |     |     |     |
|   | 100 |     | 105 |     | 110 |
| Ile Ile Leu Leu Pro Val Asn Leu Ile Val Ala Gly Leu Arg Leu Phe |     |     |     |     |     |
|   | 115 |     | 120 |     | 125 |
| Met Pro Leu Pro Pro Lys Lys Ile Val Glu Asp Leu Ser Glu Pro Thr |     |     |     |     |     |
|   | 130 |     | 135 |     | 140 |
| Thr Glu Glu Thr Asn Glu Val Ile Gln Pro Phe Ile Phe Ala Leu Gln |     |     |     |     |     |
| 145   |     | 150 |     | 155 | 160 |
| Ala Leu Leu Phe Glu Asp Asn Lys Leu Arg Ser Phe Lys Ile Val Glu |     |     |     |     |     |
|   | 165 |     | 170 |     | 175 |
| Gln Ser Val Gly Lys Ala Pro Leu Pro Asn Pro Phe Leu Asn Arg Leu |     |     |     |     |     |
|   | 180 |     | 185 |     | 190 |
| Val Ala Ile Ser Pro Gln Xaa Ser Gln Glu Ala Met Arg Lys Ile Pro |     |     |     |     |     |
|   | 195 |     | 200 |     | 205 |
| Asp Leu Cys Ser Gln Leu Lys Lys Val Leu Lys Ser Leu Gly Val Leu |     |     |     |     |     |
|   | 210 |     | 215 |     | 220 |

Thr Pro Glu Trp Lys His Met Leu Lys Tyr Phe Glu Gly Leu Lys Asn  
 225 230 235 240  
 Glu His Asp Ser Asn Pro Asp Lys Lys Thr Phe Pro Ile Leu Ile Lys  
 245 250 255  
 Leu Leu Ile Glu Ala Leu Thr Gly Lys Ser Ser Leu Pro Lys Thr Pro  
 260 265 270  
 Ser Thr Lys Glu Lys Met Gln Ala Ala Leu Phe Ile Ala Ser Ser Cys  
 275 280 285  
 Lys Thr Cys Lys Pro Thr Trp Gly Glu Val Ile Thr Arg Ser Leu Asn  
 290 295 300  
 Arg Leu Tyr Ser Ile Ala Asn Glu Gly Asp Asn Gln Leu Leu Ile Trp  
 305 310 315 320  
 Val Gln Glu Phe Lys Glu Arg Glu Leu Met Ser Ile Gln Asp Gly Asp  
 325 330 335  
 Asp Ala Glu Glu Tyr Arg Phe Ala Ala Gln Gln His Gly Glu Arg Tyr  
 340 345 350  
 Thr Glu Ala Ile Glu Gln Val Leu Arg Asn Glu Ser Ala Ala Lys Leu  
 355 360 365  
 Gln Trp His Val Ile Asn Thr Met Lys Phe Phe His Gly Lys Asn Leu  
 370 375 380  
 Gly Leu Val Thr Glu His Leu Gln Asp Thr Leu Gly Ala Leu Thr Leu  
 385 390 395 400  
 Arg Gln Thr Thr Val Asp Thr His Gln Gly Arg Glu Asp Ala Asp Leu  
 405 410 415  
 Ser Ala Ala Leu Phe Leu Asn Lys Tyr Leu Asn Ser Gly Asn Gln Leu  
 420 425 430  
 Val Asn Ser Val Phe Lys Ser Met Gln Lys Ala Asp Pro Glu Thr Lys  
 435 440 445  
 Ala Leu Ile Arg Glu Phe Ala Leu Asp Ile Leu Tyr Ala Ser Leu Arg  
 450 455 460  
 Leu Pro Gln Thr Ser Ala His Thr Glu Val Phe Ser Thr Leu Leu Met  
 465 470 475 480  
 Asp Pro Glu Thr Tyr Glu Pro Asn Lys Ala Cys Ile Ala Tyr Leu Leu  
 485 490 495  
 Tyr Val Leu Lys Ile Ile Glu Leu  
 500

&lt;210&gt;1037

&lt;211&gt;615

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1037

Lys Gly Phe Ser Phe Ser Lys Val Gly Leu Asn Met Ile Pro Ser Gly  
 1 5 10 15  
 Leu Val Tyr Leu Leu Tyr Pro Leu Gly Phe Leu Ala Ser Leu Phe Phe  
 20 25 30  
 Gly Ser Ala Phe Ser Ile Gln Trp Trp Leu Ser Lys Lys Arg Lys Glu  
 35 40 45  
 Val Tyr Ala Pro Arg Ser Phe Trp Ile Leu Ser Ser Ile Gly Ala Thr  
 50 55 60  
 Leu Met Ile Val His Gly Thr Ile Gln Ser Gln Phe Pro Val Thr Val  
 65 70 75 80  
 Leu His Val Ile Asn Leu Ile Ile Tyr Leu Arg Asn Leu Asn Ile Thr  
 85 90 95  
 Ser Ser Arg Pro Ile Ser Phe Arg Ala Thr Leu Val Leu Met Ala Leu  
 100 105 110  
 Ser Val Val Phe Val Thr Leu Pro Phe Leu Tyr Val Asn Met Glu Trp  
 115 120 125  
 Met Ala Ser Pro Asn Ile Phe His Leu Pro Leu Pro Pro Ala Gln Leu  
 130 135 140  
 Ser Trp His Leu Ile Gly Cys Leu Gly Leu Ala Ile Phe Ser Gly Arg  
 145 150 155 160  
 Phe Leu Ile Gln Trp Phe Tyr Ile Glu Ser Asn Asn Thr Lys Asp Phe  
 165 170 175  
 Pro Leu Leu Phe Trp Lys Ile Gly Leu Leu Gly Gly Leu Leu Ala Leu

1059

Asn His Asn Ile Lys Leu Lys Asp Phe Ser Pro His Ala Leu Ser Val  
 35 40 45  
 Ile Lys Thr Leu Arg Lys Ala Gly Tyr Ile Ala Tyr Ile Val Gly Gly  
 50 55 60  
 Cys Ile Arg Asp Leu Leu Leu Asn Thr Thr Pro Lys Asp Phe Asp Ile  
 65 70 75 80  
 Ser Thr Ser Ala Lys Pro Glu Glu Ile Lys Ala Ile Phe Lys Asn Cys  
 85 90 95  
 Ile Leu Val Gly Lys Arg Phe Arg Leu Ala His Ile Arg Phe Ser Lys  
 100 105 110  
 Gln Ile Ile Glu Val Ser Thr Phe Arg Ser Gly Ser Thr Asp Glu Asp  
 115 120 125  
 Val Leu Ile Thr Lys Asp Asn Leu Trp Gly Thr Pro Glu Glu Asp Val  
 130 135 140  
 Leu Arg Arg Asp Phe Thr Ile Asn Gly Leu Phe Tyr Asp Pro Glu His  
 145 150 155 160  
 Glu Glu Ile Ile Asp Tyr Thr Gly Gly Val Asn Asp Leu Arg Asn Arg  
 165 170 175  
 Tyr Leu Arg Thr Ile Gly Asp Pro Phe Thr Arg Phe Lys Gln Asp Pro  
 180 185 190  
 Val Arg Met Leu Arg Leu Leu Lys Ile Leu Ser Arg Ser Pro Phe Thr  
 195 200 205  
 Val Glu Thr Gln Thr Gln Glu Ala Leu Ile Ala Cys Arg Gln Glu Leu  
 210 215 220  
 Ile Lys Ser Ser Arg Ala Arg Val Phe Glu Glu Leu Ile Lys Met Leu  
 225 230 235 240  
 Asn Ser Gly Ala Ala Lys Asn Phe Phe Gln Leu Leu Ile Glu Asn His  
 245 250 255  
 Leu Leu Glu Ile Leu Phe Pro Tyr Met Asp Lys Ala Phe Arg Leu Asn  
 260 265 270  
 Arg Ala Leu Glu Glu Gln Thr Ala Thr Tyr Leu Lys Ala Leu Asp Asp  
 275 280 285  
 Lys Ile Leu Lys Lys Glu Ala Glu Tyr Asp Arg His Gln Leu Met Ala  
 290 295 300  
 Ile Phe Leu Phe Pro Leu Val Asn Phe Asn Val Arg Tyr Lys His Gln  
 305 310 315 320  
 Lys His Pro Tyr Leu Ser Leu Thr Ser Val Phe Asp Tyr Ile Lys Asn  
 325 330 335  
 Phe Leu Glu Gln Phe Phe Ala Asp Ser Phe Thr Ser Cys Ser Lys Lys  
 340 345 350  
 Asn Phe Ile Leu Thr Ala Leu Ile Leu Gln Met Gln Tyr Arg Leu Thr  
 355 360 365  
 Pro Leu Ile Pro Thr Lys Lys Ala Leu Phe Phe Asn Lys Lys Leu Leu  
 370 375 380  
 His His Thr Arg Phe Leu Glu Ala Leu Ser Leu Leu Glu Ile Arg Ser  
 385 390 395 400  
 Ile Val Tyr Pro Lys Leu Asp Lys Val Tyr Val Ala Trp Ile Arg His  
 405 410 415  
 His Gln Thr Leu Lys Cys Lys Lys Asp Ser His Ser Gln Lys  
 420 425 430  
 <210>1039  
 <211>395  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1039  
 Glu Arg Ile Asp Cys Trp Leu Asn Ser Met Gly Ile Glu Thr Leu Val  
 1 5 10 15  
 Leu Gly Pro Ile Pro Thr Pro Gly Val Ala Phe Ile Thr Arg Ala Tyr  
 20 25 30  
 Arg Ala Asp Ala Gly Ile Met Ile Ser Ala Ser His Asn Pro Tyr Arg  
 35 40 45  
 Asp Asn Gly Ile Lys Ile Phe Ser Leu Glu Gly Phe Lys Ile Ser Asp  
 50 55 60  
 Val Leu Glu Gln Arg Ile Glu Thr Met Val Ser Glu Ala Asp Phe Gly

65 70 75 80  
 Pro Leu Pro Glu Asp His Ala Val Gly Lys Asn Lys Arg Val Ile Asp  
 85 90 95  
 Ala Met Gly Arg Tyr Val Glu Phe Val Lys Ala Thr Phe Pro Lys Gly  
 100 105 110  
 Arg Thr Leu Lys Gly Leu Lys Ile Val Leu Asp Cys Ala His Gly Ala  
 115 120 125  
 Ser Tyr Lys Val Ala Pro Ser Val Phe Glu Glu Leu Asp Ala Glu Val  
 130 135 140  
 Ile Cys Tyr Gly Cys Glu Pro Thr Gly Ile Asn Ile Asn Glu His Cys  
 145 150 155 160  
 Gly Ala Leu Phe Pro Gln Val Ile Gln Lys Ala Val Ile Glu His Gln  
 165 170 175  
 Ala His Leu Gly Ile Ala Leu Asp Gly Asp Gly Asp Arg Ile Ile Met  
 180 185 190  
 Val Asp Glu Lys Gly His Ile Val Asp Gly Asp Met Ile Leu Ser Ile  
 195 200 205  
 Cys Ala Gly Asp Leu Lys Lys Arg Ser Ala Leu Pro His Asn Arg Val  
 210 215 220  
 Val Ala Thr Ile Met Thr Asn Phe Gly Val Leu Lys Tyr Leu Glu Gly  
 225 230 235 240  
 Leu Gly Leu Gln Val Phe Thr Ser Pro Val Gly Asp Arg His Val Leu  
 245 250 255  
 His Ala Met Leu Glu His Glu Val Thr Xaa Gly Gly Glu Gln Ser Gly  
 260 265 270  
 His Met Ile Phe Leu Asp Tyr Asn Thr Thr Gly Asp Gly Ile Val Ser  
 275 280 285  
 Ala Leu Gln Val Leu Arg Ile Met Ile Glu Ser Glu Ser Met Leu Ser  
 290 295 300  
 Asp Leu Thr Ala Pro Ile Val Lys Ser Pro Gln Thr Leu Ile Asn Val  
 305 310 315 320  
 Ala Val Arg Glu Lys Ile Pro Leu Glu Thr Ile Pro Leu Ile Glu Arg  
 325 330 335  
 Thr Leu Arg Asp Val Gln Asp Ala Leu Gly Pro Ser Gly Arg Ile Leu  
 340 345 350  
 Leu Arg Tyr Ser Gly Thr Glu Asn Ile Cys Arg Val Met Val Glu Gly  
 355 360 365  
 His Lys Lys His Gln Val Asp Cys Leu Ala Lys Ala Leu Ala Asp Val  
 370 375 380  
 Ile Asp Ala Glu Leu Gly Thr Gly Ser Arg Glu  
 385 390 395  
 <210>1040  
 <211>161  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1040  
 Met Cys Gly Ile Phe Gly Tyr Leu Gly Asn Gln Asp Gly Val Ser Ile  
 1 5 10 15  
 Val Leu Glu Gly Leu Ala Lys Leu Glu Tyr Arg Gly Tyr Asp Ser Ala  
 20 25 30  
 Gly Leu Ala Ala Val Val Glu Gln Glu Leu Phe Ile Arg Lys Thr Val  
 35 40 45  
 Gly Arg Val Gln Glu Leu Ser Asn Leu Phe Gln Glu Arg Glu Ile Pro  
 50 55 60  
 Thr Ala Ser Val Ile Gly His Thr Arg Trp Ala Thr His Gly Val Pro  
 65 70 75 80  
 Thr Glu Ile Asn Ala His Pro His Val Asp Glu Gly Arg Ser Cys Ala  
 85 90 95  
 Val Val His Asn Gly Ile Ile Glu Asn Phe Lys Glu Leu Arg Arg Glu  
 100 105 110  
 Leu Thr Ala Gln Gly Ile Ser Phe Ala Ser Asp Thr Asp Ser Glu Ile  
 115 120 125  
 Ile Val Gln Leu Phe Ser Leu Tyr Tyr Gln Glu Ser Gln Asp Leu Val  
 130 135 140



Phe Ser Phe Cys Gln Thr Leu Ala Gln Leu Arg Gly Ser Val Ala Ala  
 145 150 155 160  
 Leu

&lt;210&gt;1041

&lt;211&gt;307

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1041

Arg Ser Cys Ala Leu Ile His Lys Asp His Pro His Thr Ile Leu Cys  
 1 5 10 15  
 Ala Ser Gln Glu Ser Pro Leu Ile Leu Gly Leu Gly Lys Glu Glu Thr  
 20 25 30  
 Phe Ile Ala Ser Asp Ser Arg Ala Phe Phe Lys Tyr Thr Arg His Ser  
 35 40 45  
 Gln Ala Leu Ala Ser Gly Glu Phe Ala Ile Val Ser Gln Gly Lys Glu  
 50 55 60  
 Pro Glu Val Tyr Asn Leu Glu Leu Lys Lys Ile His Lys Asp Val Arg  
 65 70 75 80  
 Gln Ile Thr Cys Ser Glu Asp Ala Ser Asp Lys Ser Gly Tyr Gly Tyr  
 85 90 95  
 Tyr Met Leu Lys Glu Ile Tyr Asp Gln Pro Glu Val Leu Glu Gly Leu  
 100 105 110  
 Ile Gln Lys His Met Asp Glu Glu Gly His Ile Leu Ser Glu Phe Leu  
 115 120 125  
 Ser Asp Val Pro Ile Lys Ser Phe Lys Glu Ile Thr Ile Val Ala Cys  
 130 135 140  
 Gly Ser Ser Tyr His Ala Gly Tyr Leu Ala Lys Tyr Ile Ile Glu Ser  
 145 150 155 160  
 Leu Val Ser Ile Pro Val His Ile Glu Val Ala Ser Glu Phe Arg Tyr  
 165 170 175  
 Arg Arg Pro Tyr Ile Gly Lys Asp Thr Leu Gly Ile Leu Ile Ser Gln  
 180 185 190  
 Ser Gly Glu Thr Ala Asp Thr Leu Ala Ala Leu Lys Glu Leu Arg Arg  
 195 200 205  
 Arg Asn Ile Ala Tyr Leu Leu Gly Ile Cys Asn Val Pro Glu Ser Ala  
 210 215 220  
 Ile Ala Leu Gly Val Asp His Cys Leu Phe Leu Glu Ala Gly Val Glu  
 225 230 235 240  
 Ile Gly Val Ala Thr Thr Lys Ala Phe Thr Ser Gln Leu Leu Leu Leu  
 245 250 255  
 Val Phe Leu Gly Leu Lys Leu Ala Asn Val His Gly Ala Leu Thr His  
 260 265 270  
 Ala Glu Gln Cys Ser Phe Gly Gln Gly Leu Gln Ser Leu Pro Asp Leu  
 275 280 285  
 Cys Gln Lys Leu Leu Ala Gln Arg Val Ser Pro Phe Leu Gly Ala Ala  
 290 295 300  
 Leu Leu Leu  
 305

&lt;210&gt;1042

&lt;211&gt;182

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1042

Leu Thr Gln Asn Asn Val Pro Leu Ala Arg Asp Tyr Lys Ala Tyr Gln  
 1 5 10 15  
 Ile Ser Val Lys Asn Phe Leu Pro Asn Glu Ser Leu His Ser Trp Ala  
 20 25 30  
 Gln Pro Tyr Ser Tyr Glu Asp Lys Phe Leu Phe Leu Gly Arg Arg Leu  
 35 40 45  
 Met Tyr Pro Val Val Met Glu Ala Ala Leu Lys Leu Lys Glu Ile Ala  
 50 55 60  
 Tyr Ile Glu Ala Asn Ala Tyr Pro Gly Gly Glu Met Lys His Gly Pro  
 65 70 75 80

Ile Ala Leu Ile Ser Lys Gly Thr Pro Val Ile Ala Phe Cys Gly Asp  
 85 90 95  
 Asp Ile Val Tyr Glu Lys Met Ile Gly Asn Met Met Glu Val Lys Ala  
 100 105 110  
 Arg His Ala His Val Ile Ala Ile Ala Pro Glu Ser Arg Glu Asp Ile  
 115 120 125  
 Ala Ala Val Ser Asp Gln Gln Ile Phe Val Pro Asp Cys His Phe Leu  
 130 135 140  
 Ala Ala Pro Val Leu Tyr Thr Ile Val Gly Gln Val Met Ala Tyr Ala  
 145 150 155 160  
 Met Ala Leu Ala Lys Gly Met Glu Ile Asp Cys Pro Arg Asn Leu Ala  
 165 170 175  
 Lys Ser Val Thr Val Glu  
 180

&lt;210&gt;1043

&lt;211&gt;259

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1043

Ser His Asp Leu Asp Xaa Arg Ile Lys Glu Pro Ser Glu His Ala Phe  
 1 5 10 15  
 Tyr Gly Gly Ile Tyr Phe Arg Ser Cys Arg Gln Asp Phe Tyr Met Pro  
 20 25 30  
 Cys Leu Leu Val Ser Leu Leu Leu Pro Thr Asp Cys Tyr Phe Cys Glu  
 35 40 45  
 Gly Gly Asn Ile Leu Cys Arg Val Phe Asn Cys Gln Asn Leu Gly Ile  
 50 55 60  
 Ser Trp Ile Arg His Leu Gly Pro Leu Gly Phe Ala Ile Leu Met Gly  
 65 70 75 80  
 Pro Ile Ile Met Ala Gly Thr Lys Val Ile Asp Tyr Cys Asn Arg Phe  
 85 90 95  
 Phe Met Phe Gly Leu Thr Val Ala Phe Gly Ile Phe Cys Ala Leu Gly  
 100 105 110  
 Phe Leu Lys Ile Gln Pro Ser Phe Leu Val Arg Ser Ser Trp Leu Thr  
 115 120 125  
 Thr Ile Asn Ala Phe Pro Val Phe Phe Leu Ala Phe Gly Phe Gln Ser  
 130 135 140  
 Ile Ile Pro Thr Leu Tyr Tyr Tyr Met Asp Lys Lys Val Gly Asp Val  
 145 150 155 160  
 Lys Lys Ala Ile Leu Ile Gly Thr Leu Ile Pro Leu Val Leu Tyr Val  
 165 170 175  
 Leu Trp Glu Val Val Val Leu Gly Ala Val Ser Leu Pro Ile Leu Ser  
 180 185 190  
 Gln Ala Lys Ile Gly Gly Tyr Thr Ala Val Glu Ala Leu Lys Gln Ala  
 195 200 205  
 His Arg Ser Trp Ala Phe Tyr Ile Ala Gly Glu Leu Phe Gly Phe Phe  
 210 215 220  
 Ala Leu Val Ser Ser Phe Val Gly Val Ala Leu Gly Val Met Asp Phe  
 225 230 235 240  
 Leu Ala Asp Gly Leu Lys Trp Asn Lys Lys Ser His Pro Asn Phe Gln  
 245 250 255  
 Phe Ser Phe

&lt;210&gt;1044

&lt;211&gt;241

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1044

Glu Gly Ser Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg  
 1 5 10 15  
 Val Gln Gly Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly  
 20 25 30  
 Leu Ile Val Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu  
 35 40 45

Tyr Arg Ser Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu  
 50 55 60  
 Gly Val Ser Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Ser  
 65 70 75 80  
 Ala Val Gly Gly Leu Phe Leu Leu Tyr Ser Thr Leu Glu Gly Met Phe  
 85 90 95  
 Phe Gly Thr Leu Leu Pro Val Tyr Ala Ala Gln Tyr Gly Gly Gly Val  
 100 105 110  
 Ile Trp Ala Ala Phe Gly Ser Ala Ala Leu Val Phe Gly Leu Ala Ala  
 115 120 125  
 Val Tyr Gly Ala Phe Thr Lys Ser Asp Leu Thr Lys Ile Ser Lys Ile  
 130 135 140  
 Met Thr Phe Ala Leu Ile Gly Leu Leu Leu Val Thr Leu Val Phe Ala  
 145 150 155 160  
 Val Val Ser Met Phe Val Ser Met Pro Leu Ile Tyr Leu Leu Ile Cys  
 165 170 175  
 Tyr Leu Gly Leu Val Ile Phe Val Gly Leu Thr Ala Ala Asp Ala Gln  
 180 185 190  
 Ala Ile Arg Arg Ile Ser Ser Thr Ile Gly Asp Asn Asn Thr Leu Ser  
 195 200 205  
 Tyr Lys Leu Ser Leu Met Phe Ala Leu Lys Met Tyr Cys Asn Val Ile  
 210 215 220  
 Met Val Phe Trp Tyr Leu Leu Gln Ile Phe Ser Ser Ser Gly Asn Arg  
 225 230 235 240  
 Asp

&lt;210&gt;1045

&lt;211&gt;316

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1045

Arg Cys Ile Asn Asn Ser Leu Leu Phe Pro Ser Tyr Leu Val Ser Phe  
 1 5 10 15  
 Leu Leu Leu Gln Leu Thr Leu Leu Leu Ala Met Phe Lys Phe Phe Arg  
 20 25 30  
 Asn Lys Leu Gln Ser Leu Phe Lys Lys Asn Ile Ser Leu Asp Leu Ile  
 35 40 45  
 Glu Asp Ala Glu Ser Leu Phe Tyr Glu Ala Asp Phe Gly Thr Glu Leu  
 50 55 60  
 Thr Glu Glu Leu Cys Ala Arg Leu Arg Arg Thr Lys Lys Ala Asp Ala  
 65 70 75 80  
 Ser Thr Ile Lys Asp Leu Ile Thr Val Leu Leu Arg Glu Ser Leu Glu  
 85 90 95  
 Gly Leu Pro Ser Gln Ala Ser Gln Ser Ser Gln Thr Arg Pro Ile Val  
 100 105 110  
 Ser Leu Leu Leu Gly Thr Asn Gly Ser Gly Lys Thr Thr Thr Ala Ala  
 115 120 125  
 Lys Leu Ala His Tyr Tyr Lys Glu Arg Ser Glu Ser Val Met Leu Val  
 130 135 140  
 Ala Thr Asp Thr Phe Arg Ala Ala Gly Met Asp Gln Ala Arg Leu Trp  
 145 150 155 160  
 Ala Asn Glu Leu Gly Cys Gly Phe Val Ser Gly Gln Pro Gly Gly Asp  
 165 170 175  
 Ala Ala Ala Ile Ala Phe Asp Gly Ile Gln Ser Ala Ile Ala Arg Gly  
 180 185 190  
 Tyr Ser Arg Val Ile Ile Asp Thr Ser Gly Arg Leu His Val His Gly  
 195 200 205  
 Asn Leu Met Lys Glu Leu Ser Lys Ile Val Ser Val Cys Gly Lys Ala  
 210 215 220  
 Leu Glu Gly Ala Pro His Glu Ile Phe Met Thr Val Asp S r Thr Leu  
 225 230 235 240  
 Gly Asn Asn Ala Ile Glu Gln Val Arg Val Phe His Asp Val Val Pro  
 245 250 255  
 Leu Ser Gly Leu Ile Phe Thr Lys Val Asp Gly Ser Ala Lys Gly Gly

260 265 270  
 Thr Leu Phe Gln Ile Ala Lys Arg Leu Lys Ile Pro Thr Lys Phe Ile  
 275 280 285  
 Gly Tyr Gly Glu Ser Leu Lys Asp Leu Asn Glu Phe Asp Leu Asp Leu  
 290 295 300  
 Phe Leu Asn Lys Leu Phe Pro Glu Val Glu Lys Ile  
 305 310 315  
 <210>1046  
 <211>386  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1046  
 Met His Leu His Glu Tyr Gln Ala Lys Asp Leu Leu Ala Ser Tyr Asp  
 1 5 10 15  
 Val Pro Ile Pro Pro Tyr Trp Val Val Ser Ser Glu Glu Glu Gly Glu  
 20 25 30  
 Leu Leu Ile Thr Lys Ser Gly Leu Asp Ser Ala Val Val Lys Val Gln  
 35 40 45  
 Val His Ala Gly Gly Arg Gly Lys His Gly Gly Val Ile Val Ala Lys  
 50 55 60  
 Ser Ser Ala Gly Ile Leu Gln Ala Val Ala Lys Leu Leu Gly Met His  
 65 70 75 80  
 Phe Thr Ser Asn Gln Thr Ala Asp Gly Phe Leu Pro Val Glu Lys Val  
 85 90 95  
 Leu Ile Ser Pro Leu Val Ala Ile Gln Arg Glu Tyr Tyr Val Ala Val  
 100 105 110  
 Ile Met Asp Arg Lys His Arg Cys Pro Val Leu Met Leu Ser Lys Ala  
 115 120 125  
 Gly Gly Met Asp Ile Glu Glu Val Ala His Ser Ser Pro Glu Gln Ile  
 130 135 140  
 Leu Thr Leu Pro Leu Thr Ser Tyr Gly His Ile Tyr Ser Tyr Gln Leu  
 145 150 155 160  
 Arg Gln Ala Thr Lys Phe Met Glu Trp Glu Gly Glu Val Met His Gln  
 165 170 175  
 Gly Val Gln Leu Ile Lys Lys Leu Ala Lys Cys Phe Tyr Glu Asn Asp  
 180 185 190  
 Val Ser Leu Leu Glu Ile Asn Pro Leu Val Leu Thr Leu Glu Gly Glu  
 195 200 205  
 Leu Leu Val Leu Asp Ser Lys Ile Thr Ile Asp Asp Asn Ala Leu Tyr  
 210 215 220  
 Arg His Pro Asn Leu Glu Val Leu Tyr Asp Pro Ser Gln Glu Asn Val  
 225 230 235 240  
 Arg Asp Val Leu Ala Lys Gln Ile Gly Leu Ser Tyr Ile Ala Leu Ser  
 245 250 255  
 Gly Asn Ile Gly Cys Ile Val Asn Gly Ala Gly Leu Ala Met Ser Thr  
 260 265 270  
 Leu Asp Ile Leu Lys Leu His Gly Gly Asn Ala Ala Asn Phe Leu Asp  
 275 280 285  
 Val Gly Gly Gly Ala Ser Gln Lys Gln Ile Gln Glu Ala Val Ser Leu  
 290 295 300  
 Val Leu Ser Asp Glu Ser Val Lys Val Leu Phe Ile Asn Ile Phe Gly  
 305 310 315 320  
 Xaa Ile Met Asp Cys Ser Val Val Ala Ser Gly Leu Val Ala Val Met  
 325 330 335  
 Glu Thr Arg Asp Gln Val Val Pro Thr Val Ile Arg Leu Glu Gly Thr  
 340 345 350  
 Asn Val Glu Leu Gly Lys Glu Ile Val Gln Gln Ser Gly Ile Pro Cys  
 355 360 365  
 Gln Phe Val Ser Ser Met Glu Glu Gly Ala Arg Arg Ala Val Glu Leu  
 370 375 380  
 Ser Met  
 385  
 <310>1047  
 <211>300

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1047

Val Cys Arg Phe Arg Arg Tyr Met Phe His Ser Leu Ser Lys Asn Thr  
 1 5 10 15  
 Pro Ile Ile Thr Gln Gly Ile Thr Gly Lys Ala Gly Ser Phe His Thr  
 20 25 30  
 Glu Gln Cys Leu Ala Tyr Gly Thr Asn Phe Val Gly Gly Val Thr Pro  
 35 40 45  
 Gly Lys Gly Gly Thr Leu Trp Leu Asp Leu Pro Val Tyr Asp Ser Val  
 50 55 60  
 Leu Glu Ala Lys Gln Ala Thr Gly Cys Arg Ala Thr Met Ile Phe Val  
 65 70 75 80  
 Pro Pro Pro Tyr Ala Ala Glu Ala Ile Leu Glu Ala Glu Glu Ala Gly  
 85 90 95  
 Ile Glu Leu Ile Val Cys Ile Thr Glu Gly Ile Pro Val Arg Asp Met  
 100 105 110  
 Leu Glu Val Ala Arg Val Met Asp Asn Ser Thr Ser Gln Leu Ile Gly  
 115 120 125  
 Pro Asn Cys Pro Gly Ile Ile Lys Pro Gly Glu Cys Lys Ile Gly Ile  
 130 135 140  
 Met Pro Gly Tyr Ile His Leu Pro Gly Asn Ile Gly Val Val Ser Arg  
 145 150 155 160  
 Ser Gly Thr Leu Thr Tyr Glu Ala Val Trp Gln Leu Thr Gln Leu Lys  
 165 170 175  
 Ile Gly Gln Ser Ile Cys Val Gly Ile Gly Gly Asp Pro Leu Asn Gly  
 180 185 190  
 Thr Ser Phe Ile Asp Val Leu Gln Ala Leu Glu Glu Asp Pro Tyr Thr  
 195 200 205  
 Glu Leu Ile Leu Met Ile Gly Glu Ile Gly Gly Ser Ala Glu Glu Glu  
 210 215 220  
 Ala Ala Ala Trp Ile Gln Ala His Cys Thr Lys Pro Val Val Ala Phe  
 225 230 235 240  
 Ile Ala Gly Val Thr Ala Pro Lys Gly Lys Arg Met Gly His Ala Gly  
 245 250 255  
 Ala Ile Ile Ser Gly Asn Ser Gly Asp Ala Lys Ser Lys Ile Gln Val  
 260 265 270  
 Leu Arg Glu Ser Gly Val Thr Val Val Glu Ser Pro Ala His Ile Gly  
 275 280 285  
 Lys Thr Val Asp Ala Val Leu Arg Ala Lys Glu Leu  
 290 295 300

&lt;210&gt;1048

&lt;211&gt;369

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1048

Ile Leu Met Leu Val Tyr Cys Phe Asp Pro Ser Val Pro Thr Ser Pro  
 1 5 10 15  
 Glu His Arg Leu Met Ala Ala Leu Asp Arg Trp Phe Phe Leu Gly Gly  
 20 25 30  
 His Arg Val Arg Ile Leu Thr Leu Glu Gly Asn His Tyr Arg Ala Phe  
 35 40 45  
 Gln Glu Asn Met Ser Ile Ser Thr Val Glu Lys Ile Leu Lys Leu Ile  
 50 55 60  
 Ser Tyr Leu Leu Ile Pro Ile Val Leu Ile Ala Leu Leu Ile Arg Cys  
 65 70 75 80  
 Phe Leu His Ser Arg Phe Lys Cys Asn Trp Lys Cys Asp Ser Leu Ser  
 85 90 95  
 Asp Ala Arg Val Pro His Asp Val Gln Pro Phe Asn Asp Phe Gln Leu  
 100 105 110  
 Phe Asn Asn Gln Glu Arg Leu Asn Ile Trp Lys Asn Arg Arg Tyr Val  
 115 120 125  
 Ser Gly Ile Asp Val Leu Met Val Pro Val Asp Tyr Leu Arg Ser Gln  
 130 135 140

Phe Pro Gly Phe Lys Glu Ile Pro Glu Ala Ile Arg Cys Glu Asn Tyr  
 145 150 155 160  
 Val Ser Asp Gly Gln Phe Ser Glu Glu Ser Lys Thr Ser Tyr Leu Arg  
 165 170 175  
 Ala Met Leu Thr Asp Ile Val Gly Tyr Ile Leu Ser Leu Asp Glu Thr  
 180 185 190  
 Tyr Trp Thr Asn Val Ile Leu Lys Ile Arg Ala Met Cys Ile Thr Phe  
 195 200 205  
 Glu Ser Phe Pro Gly Lys Glu Ala Asp Pro Asn Tyr Ser Pro Arg Val  
 210 215 220  
 Thr His His Tyr Phe Asp Glu Ser Trp Lys Ala Leu Ala Arg His Val  
 225 230 235 240  
 Leu Gly Glu Gly Asn Met Val Asn Arg Leu Asp Glu Ala Leu Ile Arg  
 245 250 255  
 Thr Glu Lys Pro Gly Lys Glu Gly Glu Cys Ile Thr Lys Gln Phe Leu  
 260 265 270  
 Lys Asp Tyr Cys Lys Lys His Leu Glu Val Met Ser Cys Pro Asp Phe  
 275 280 285  
 Ile Glu Ser Leu Val Asp Glu Lys Ile Arg Glu Phe Arg Cys Pro Ser  
 290 295 300  
 Ile Leu Asn Ser Ala Val Cys Asp Val Ile Asp Arg Lys Cys Gln Glu  
 305 310 315 320  
 His Leu Leu Lys Ala Ile Ile Asn Glu Ala Asn Arg Arg Leu Pro Gly  
 325 330 335  
 Met Lys Asn Ser Ser Phe Thr Met Arg Gly Asn Gln Val Leu Phe Tyr  
 340 345 350  
 Thr Ile Phe Ser Pro Pro Lys Leu Pro Pro Ala Ala Ser Ser Val Tyr  
 355 360 365  
 Phe

&lt;210&gt;1049

&lt;211&gt;358

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1049

Leu Tyr Ile Asn Gln Phe Ala Asn Ile Leu Lys Ser Ser Phe Leu Met  
 1 5 10 15  
 Glu Val Tyr Ser Phe Ser Pro Ser Val Arg Thr Ser Phe Gln His Arg  
 20 25 30  
 Val Met Ala Ala Leu Asp Asn Trp Phe Phe Leu Gly Gly Arg Arg Leu  
 35 40 45  
 Lys Val Val Ser Leu Asp Ser Cys Asn Ser Gly Gln Ala Cys Glu Glu  
 50 55 60  
 Tyr Val Pro Ile Ser Thr Thr Glu Lys Val Leu Lys Ile Leu Ser Tyr  
 65 70 75 80  
 Leu Leu Ile Pro Ile Val Ile Ile Ala Leu Leu Ile Arg Tyr Leu Leu  
 85 90 95  
 His Ser Asn Phe Thr Ala Lys Val Ser Gln Lys Pro Trp Leu Lys Thr  
 100 105 110  
 Leu Gln Leu Gly Ile Asp Ile Lys Ser Phe Ile Leu Pro Gly Ser His  
 115 120 125  
 Val Asn Thr Met Asp Ser Ala Thr Leu Phe Lys Ala Ile Arg Leu Glu  
 130 135 140  
 Gly Lys Arg Val Asp Val Glu Tyr His Arg Leu His Ser Ser Asp Lys  
 145 150 155 160  
 Val Val Phe Tyr Ile Pro Ala Gln Lys Leu Pro Asp Asp Leu Arg Leu  
 165 170 175  
 Thr His Trp Leu Pro Glu Lys Glu Thr Arg Lys Thr Glu Tyr Val Arg  
 180 185 190  
 His Met Leu Ala His Val Met Gly Tyr Leu Thr Ser Gln Gly Lys Glu  
 195 200 205  
 Arg Leu Gln Gln Val Val Gln Asp Ser Arg Ser Ser Thr Ser Leu Gly  
 210 215 220  
 Ala Glu Lys Val Leu Gln Tyr Arg Phe Ile Asp His Pro Gln Ser Gln

225 330 235 240  
 Gly Glu Phe Gln Arg Leu Leu Asn Glu Asn Ile Thr Thr Lys Gly Ser  
 245 250 255  
 Glu Asp Lys Glu Val Val Gln Ser Asp Leu Phe Asp Met Ala Phe Gln  
 260 265 270  
 Cys Trp Trp Pro Gln Phe Ile Ser Val Ile Gln Ser Pro Thr Phe Ser  
 275 280 285  
 Glu Glu Leu Val His Glu Met Ser Gln Lys Leu Asp Leu Asp Cys Ile  
 290 295 300  
 Tyr Pro Glu Asp Asp Glu Phe Glu Gln Lys Phe Leu Asn Thr Leu Leu  
 305 310 315 320  
 Lys Ala Val Leu His His Gly Phe Glu Gly Ile Ser Val Ala Ser Met  
 325 330 335  
 Gly Val Ile Phe Leu Ile Cys Pro Asp Ser Leu Ala Leu Gln Ile Pro  
 340 345 350  
 Phe Leu Arg Asn Gln Lys  
 355  
 <210>1050  
 <211>336  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1050  
 Phe Ser Pro Ala Val Arg Thr Ser Phe Gln His Arg Val Met Ala Ala  
 1 5 10 15  
 Leu Asp Ala Trp Phe Phe Leu Gly Gly His Arg Leu Lys Val Val Ser  
 20 25 30  
 Leu Asp Ser Cys Asn Ser Gly Trp Ala Tyr Gln Glu Leu Val Ser Ile  
 35 40 45  
 Ser Thr Thr Glu Lys Val Leu Lys Leu Leu Ser Tyr Leu Leu Val Pro  
 50 55 60  
 Ile Val Ile Ile Ala Leu Ile Arg Cys Leu Leu His Ser Asn Phe  
 65 70 75 80  
 Arg Ile Asp Val Glu Lys Glu Arg Trp Leu Lys Ile Arg Glu Leu Gly  
 85 90 95  
 Ile Asp Ile Glu Ser Cys Lys Leu Pro Ser Ser Tyr Val Asn Gln Val  
 100 105 110  
 Ser Ser Phe Ile Trp Phe Glu Lys Asp Lys Ser Lys Arg Pro Arg Ile  
 115 120 125  
 Asp Val Asp Tyr His Thr Leu His Ser Lys Asp Trp Val Val Phe Pro  
 130 135 140  
 Ile Val Phe Gln Lys Ile Pro Lys Thr Ser Arg Phe Ser Tyr Trp Phe  
 145 150 155 160  
 Ser Gln Lys Glu Thr Arg Lys Arg Asp Tyr Val Arg Asn Met Leu Asp  
 165 170 175  
 His Val Ile Gly Tyr Leu Thr Ser Glu Gly Gly Glu Trp Leu Gln Tyr  
 180 185 190  
 Ile Ser Lys Thr Ser Tyr Gln Ser Ala Thr Ser Leu Asp Pro Glu Arg  
 195 200 205  
 Val Leu Gln Tyr Cys Leu Thr Asp Asn Gln Glu Leu Gln Gly Glu Val  
 210 215 220  
 Gln Arg Leu Leu Asn Glu Glu Ser Ala Thr Lys Ser Ser Gly Asp Lys  
 225 230 235 240  
 Glu Val Leu Leu Ser His Val Ser Asp Ile Ile Cys Gln Cys Trp Trp  
 245 250 255  
 Pro Lys Phe Leu Glu Val Ile Gln Ser Pro Ala Phe Ile Glu Glu Leu  
 260 265 270  
 Val Glu Glu Val Ser Gly Lys Leu Asn Leu Asp Phe Leu Cys Leu Glu  
 275 280 285  
 Lys Ala Asn Thr Leu Asp Gln Glu Leu Arg Asn Ser Leu Leu Arg Ala  
 290 295 300  
 Val Val His His Gly Ser Glu Gly Val Asp Ile Lys Lys Val Gly Ala  
 305 310 315 320  
 Gly Leu Ile Ile Tyr Thr Glu Ala Ile Gln Leu Gln Ile Pro Phe Ser  
 325 330 335

Arg Ser

&lt;210&gt;1051

&lt;211&gt;245

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1051

Gly Ile Asp Met Ile Thr Lys Gln Leu Arg Ser Trp Leu Ala Val Leu  
 1 5 10 15  
 Val Gly Ser Ser Leu Leu Ala Leu Pro Leu Ser Gly Gln Ala Val Gly  
 20 25 30  
 Lys Lys Glu Ser Arg Val Ser Glu Leu Pro Gln Asp Val Leu Leu Lys  
 35 40 45  
 Glu Ile Ser Gly Gly Phe Ser Lys Val Ala Thr Lys Ala Thr Pro Ala  
 50 55 60  
 Val Val Tyr Ile Glu Ser Phe Pro Lys Ser Gln Ala Val Thr His Pro  
 65 70 75 80  
 Ser Pro Gly Arg Arg Gly Pro Tyr Glu Asn Pro Phe Asp Tyr Phe Asn  
 85 90 95  
 Asp Glu Phe Phe Asn Arg Phe Phe Gly Leu Pro Ser Gln Arg Glu Lys  
 100 105 110  
 Pro Gln Ser Lys Glu Ala Val Arg Gly Thr Gly Phe Leu Val Ser Pro  
 115 120 125  
 Asp Gly Tyr Ile Val Thr Asn Asn His Val Val Glu Asp Thr Gly Lys  
 130 135 140  
 Ile His Val Thr Leu His Asp Gly Gln Lys Tyr Pro Ala Thr Val Ile  
 145 150 155 160  
 Gly Leu Asp Pro Lys Thr Asp Leu Ala Val Ile Lys Ile Lys Ser Gln  
 165 170 175  
 Asn Leu Pro Tyr Leu Ser Phe Gly Asn Ser Asp His Leu Lys Val Gly  
 180 185 190  
 Asp Trp Ala Ile Ala Ile Gly Asn Pro Phe Gly Leu Gln Ala Thr Val  
 195 200 205  
 Thr Val Val Ser Ser Val Leu Lys Glu Glu Ile Asn Ser Thr Leu Gln  
 210 215 220  
 Ile Leu Lys Ile Leu Phe Arg Gln Met Leu Arg Leu Ile Gln Ala Thr  
 225 230 235 240  
 Leu Glu Ala Leu Phe  
 245

&lt;210&gt;1053

&lt;211&gt;317

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1053

Ile Pro Lys Pro Pro Val Ser Phe Phe Trp Lys Leu Arg Pro Leu Lys  
 1 5 10 15  
 Ser Arg Arg Leu Gly Asn Cys Asn Trp Lys Ser Leu Arg Ser Ser Ser  
 20 25 30  
 Tyr Gly His Arg Ser Val Ile Ser Ala Lys Gly Arg Asn Gln Leu His  
 35 40 45  
 Ile Ala Asp Phe Glu Asp Phe Ile Gln Thr Asp Ala Ala Ile Asn Pro  
 50 55 60  
 Gly Asn Ser Gly Gly Pro Leu Leu Asn Ile Asp Gly Gln Val Ile Gly  
 65 70 75 80  
 Val Asn Thr Ala Ile Val Ser Gly Ser Gly Tyr Ile Gly Ile Gly  
 85 90 95  
 Phe Ala Ile Pro Ser Leu Met Ala Asn Arg Ile Ile Asp Gln Leu Ile  
 100 105 110  
 Arg Asp Gly Gln Val Thr Arg Gly Phe Leu Gly Val Thr Leu Gln Pro  
 115 120 125  
 Ile Asp Ala Glu Leu Ala Ala Cys Tyr Lys Leu Glu Lys Val Tyr Gly  
 130 135 140  
 Ala Leu Val Thr Asp Val Val Lys Gly Ser Pro Ala Asp Lys Ala Gly  
 145 150 155 160



Leu Lys Gln Glu Asp Val Ile Ile Ala Tyr Asn Gly Lys Glu Val Asp  
 165 170 175  
 Ser Leu Ser Met Phe Arg Asn Ala Val Ser Leu Met Asn Pro Asp Thr  
 180 185 190  
 Arg Ile Val Leu Lys Val Val Arg Glu Gly Lys Val Ile Glu Ile Pro  
 195 200 205  
 Val Thr Val Ser Gln Ala Pro Lys Glu Asp Gly Met Ser Ala Leu Gln  
 210 215 220  
 Arg Val Gly Ile Arg Val Gln Asn Leu Thr Pro Glu Thr Ala Lys Lys  
 225 230 235 240  
 Leu Gly Ile Ala Pro Glu Thr Lys Gly Ile Leu Ile Ile Ser Val Glu  
 245 250 255  
 Pro Gly Ser Val Ala Ala Ser Ser Gly Ile Ala Pro Gly Gln Leu Ile  
 260 265 270  
 Leu Ala Val Asn Arg Gln Lys Val Ser Ser Ile Glu Asp Leu Asn Arg  
 275 280 285  
 Thr Leu Lys Asp Ser Asn Asn Glu Asn Ile Leu Leu Met Val Ser Gln  
 290 295 300  
 Gly Asp Val Ile Arg Phe Ile Ala Leu Lys Pro Glu Glu  
 305 310 315

&lt;210&gt;1053

&lt;211&gt;104

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1053

Arg Phe Ser Tyr Glu Ile Leu Pro Gly Gly Ser Arg Gly Trp Arg Ser  
 1 5 10 15  
 Ser Ala Asn Leu Pro Ile Val Lys Val Leu Gln Glu Ile Tyr Ser Asp  
 20 25 30  
 Leu Tyr Asn Glu Glu Cys Leu Arg Leu Val Met Pro Ala Thr Ile Pro  
 35 40 45  
 Ile Gly Pro Leu Leu Gly Glu Ala Ala Gln Thr Ser Pro Ile Ile Cys  
 50 55 60  
 Gly Thr Ser Tyr Leu Ser Asp Asp Ile His Ala Ala Glu Glu His Phe  
 65 70 75 80  
 Ser Met Asp Gln Leu Lys Lys Gly Phe Leu Ser Ile Cys Gln Leu Leu  
 85 90 95  
 Asp Lys Leu Pro Lys Ile Lys Glu  
 100

&lt;210&gt;1054

&lt;211&gt;393

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1054

Met Leu Asn His Ala Lys Lys His Ala Lys Pro Tyr Val Leu Ile Phe  
 1 5 10 15  
 Phe Ser Thr Lys Asp Lys Leu Ser Tyr Cys Asp Ile Ile Phe Asn Asn  
 20 25 30  
 Cys Ser Gly Lys Pro Met Asn Leu Asp Ser Lys His Phe Asp Ile Asn  
 35 40 45  
 Ser Ala Asn Phe Leu Glu Glu Phe Ala Lys Phe Ile Ser Phe Pro Ser  
 50 55 60  
 Ile Ser Ala Asp Ser Asp His Leu Gln Asp Cys Glu Asn Cys Ala His  
 65 70 75 80  
 Phe Leu Val Asp His Val Asn Lys Ile Phe Asp Val Glu Leu Trp Glu  
 85 90 95  
 Thr Pro Gly His Pro Pro Ile Ile Tyr Ala Ser Tyr Lys Ser Glu Asp  
 100 105 110  
 Pro Leu Ser Pro Thr Leu Met Leu Tyr Asn His Tyr Asp Val Gln Pro  
 115 120 125  
 Ala Gln Leu Ser Asp Gly Trp Lys Gly Asp Pro Phe Ile Leu Arg Glu  
 130 135 140  
 Glu Asn Gly Asn Leu Tyr Ala Arg Gly Ala Ser Asp Asn Lys Gly Gln  
 145 150 155 160

Cys Phe Tyr Thr Leu Lys Ala Leu Gln His Tyr Tyr Glu Ser Gln Gly  
 165 170 175  
 Asn Phe Pro Leu Asn Ile Ile Trp Leu Ile Glu Gly Glu Glu Ser  
 180 185 190  
 Gly Ser Leu Ala Leu Phe Thr Trp Leu Glu Lys Lys Lys Glu Ala Leu  
 195 200 205  
 Arg Ala Asp Tyr Leu Leu Ile Val Asp Gly Gly Phe Leu Ser Glu Lys  
 210 215 220  
 His Pro Tyr Val Ser Ile Gly Ala Arg Gly Ile Val Ser Met Lys Ile  
 225 230 235 240  
 Ser Leu Glu Glu Gly Asn Lys Asp Met His Ser Gly Val Leu Gly Gly  
 245 250 255  
 Ile Ala Tyr Asn Thr Asn Arg Ala Leu Ser Glu Ile Leu Ser Ser Leu  
 260 265 270  
 His His Pro Asp Asn Ser Ile Ala Ile Glu Gly Phe Tyr Asp Asp Leu  
 275 280 285  
 Ala Leu Pro Ser Asp Ser Asp Arg Pro Asp Leu Pro Lys Ser Asp Thr  
 290 295 300  
 Leu Arg Glu Cys Glu Glu Asn Leu Gly Phe Arg Pro Gln Gly Tyr Glu  
 305 310 315 320  
 Ala Ser Tyr Ser Pro Glu Glu Ser Ala Leu Arg Pro Thr Val Glu Ile  
 325 330 335  
 Asn Gly Ile Ser Gly Gly Tyr Thr Gly Pro Gly Phe Lys Thr Val Ile  
 340 345 350  
 Pro Tyr Arg Ala Thr Ala Tyr Leu Ser Cys Arg Leu Val Pro Asn Gln  
 355 360 365  
 Asp Pro Asp Lys Ala Ala His Gln Val Ile His His Leu Lys Gln Gln  
 370 375 380  
 Val Pro Ser Ser Leu Lys Val Leu Leu  
 385 390  
 <210>1055  
 <211>978  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1055  
 Val Thr Glu Ser Met Lys Ala Gly Asp Thr Tyr Arg Asn Phe Ile Ile  
 1 5 10 15  
 Lys Ser Cys Lys Asp Leu Pro Glu Ile Glu Ser Lys Leu Leu Glu Ala  
 20 25 30  
 Glu His Lys Pro Thr Gly Ala Ser Ile Met Met Ile Val Asn Asn Asp  
 35 40 45  
 Glu Glu Asn Val Phe Asn Ile Cys Phe Arg Thr Cys Pro Gln Thr Ser  
 50 55 60  
 Asn Gly Val Ala His Val Leu Glu His Met Val Leu Cys Gly Ser Glu  
 65 70 75 80  
 Asn Tyr Pro Val Arg Asp Pro Phe Phe Ser Met Thr Arg Arg Ser Leu  
 85 90 95  
 Asn Thr Phe Ile Asn Ala Phe Thr Gly Pro Asp Phe Thr Cys Tyr Pro  
 100 105 110  
 Ala Ala Ser Gln Ile Pro Glu Asp Phe Tyr Asn Leu Leu Ser Val Tyr  
 115 120 125  
 Ile Asp Ala Val Phe His Pro Leu Leu Thr Lys Gln Ser Phe Leu Gln  
 130 135 140  
 Glu Ala Trp Arg Tyr Glu Phe Asn Ser Glu Asn His Leu Cys Tyr Thr  
 145 150 155 160  
 Gly Val Val Phe Asn Glu Met Lys Gly Ala Met Met Ser Gly Glu Ala  
 165 170 175  
 Arg Leu Ser Glu Ala Leu Asn Ala Ala Ile Phe Pro Ser Val Thr Tyr  
 180 185 190  
 Gly Val Asn Ser Gly Gly Glu Pro Arg Glu Ile Val Thr Leu Ser His  
 195 200 205  
 Glu Asp Val Arg Ala Phe His Gln Ser Gln Tyr Ser Ile Asn Arg Cys  
 210 215 220  
 Leu Phe Tyr Phe Tyr Gly Asn Ile Lys Pro Ser Arg His Leu Asp Phe

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Leu | Glu | Glu | Lys | Leu | Leu | Arg | Gln | Ala | Thr | Lys | Leu | Glu | Lys | Gln | Ala |
|     |     |     |     | 245 |     |     |     |     |     | 250 |     |     |     | 255 |     |
| Val | Ser | Val | Pro | Leu | Gln | Lys | Arg | Phe | Lys | Glu | Pro | Val | Arg | Asn | Ile |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Leu | Thr | Tyr | Pro | Val | Asp | His | Gln | Glu | Glu | Asp | Lys | Val | Leu | Phe | Gly |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ile | Ser | Trp | Leu | Thr | Cys | Ser | Ile | Leu | Glu | Gln | Gln | Glu | Leu | Leu | Ala |
|     |     | 290 |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Leu | His | Val | Leu | Glu | Ile | Ile | Leu | Met | Gly | Thr | Asp | Ala | Ser | Pro | Leu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Lys | Ser | Arg | Leu | Leu | Lys | Ser | Gly | Phe | Cys | Lys | Gln | Thr | Glu | Met | Ser |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |
| Ile | Glu | Asn | Asp | Ile | Arg | Glu | Ile | Pro | Met | Thr | Leu | Val | Cys | Lys | Gly |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     | 350 |     |     |     |
| Cys | Ser | Pro | Ala | Gly | Ala | Gln | Lys | Leu | Glu | Ala | Leu | Ile | Phe | Ala | Ser |
|     |     | 355 |     |     |     | 360 |     |     |     | 365 |     |     |     |     |     |
| Leu | Glu | Glu | Ile | Ile | Arg | Glu | Gly | Ile | Ser | Glu | Asn | Ile | Val | Glu | Gly |
|     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |     |
| Ala | Val | His | Gln | Leu | Glu | Leu | Ser | Arg | Lys | Glu | Ile | Thr | Gly | Tyr | Ser |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     | 400 |     |
| Leu | Pro | Tyr | Gly | Leu | Ser | Leu | Phe | Phe | Arg | Ser | Gly | Leu | Leu | Lys | Gln |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     | 415 |     |     |     |
| His | Gly | Gly | Ser | Ala | Glu | Asp | Gly | Leu | Arg | Ile | His | Asn | Leu | Phe | Ser |
|     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Glu | Leu | Arg | Asn | Ser | Leu | Lys | Asn | Ser | Asp | Tyr | Leu | Ala | Lys | Leu | Ile |
|     |     | 435 |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |
| Arg | Lys | Tyr | Phe | Leu | Asp | Asn | Pro | His | Phe | Ala | Arg | Val | Ile | Leu | Leu |
|     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |     |
| Pro | Asp | Thr | Glu | Leu | Val | Ala | Lys | Asp | Asn | Lys | Asp | Glu | Gln | Gln | Leu |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     | 480 |     |
| Leu | Leu | Ser | Val | Ser | Glu | Lys | Leu | Thr | Asp | Glu | Asn | Lys | Glu | Lys | Ile |
|     |     |     | 485 |     |     |     |     | 490 |     |     |     | 495 |     |     |     |
| Gln | Gln | Asn | Val | Arg | Glu | Leu | Thr | Glu | Ser | Gln | Glu | Gln | Lys | Glu | Asp |
|     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |     |
| Leu | Asn | Gly | Ile | Leu | Pro | Asn | Leu | Ala | Leu | Asp | Lys | Val | Pro | Thr | Ser |
|     | 515 |     |     |     | 520 |     |     |     |     |     | 525 |     |     |     |     |
| Gly | Lys | Glu | Phe | Pro | Leu | Ile | Lys | Glu | Gly | Leu | Ser | Gln | Gly | Glu | Val |
|     | 530 |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |     |
| Leu | His | His | Glu | Cys | Phe | Thr | Asn | Asp | Ile | Val | Phe | Ile | Asp | Val | Val |
| 545 |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |     |
| Leu | Asp | Ile | Pro | Pro | Leu | Ser | Gly | Glu | Glu | Leu | Pro | Trp | Leu | Arg | Leu |
|     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |     |
| Leu | Val | Phe | Leu | Met | Leu | Gln | Leu | Gly | Cys | Gly | Gly | Arg | Ser | Tyr | Lys |
|     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |     |
| Glu | His | Leu | Glu | Phe | Leu | Leu | Glu | His | Thr | Gly | Gly | Val | Asp | Val | Ser |
|     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |     |
| Tyr | Asp | Phe | Ser | Pro | His | Ala | Asn | Lys | Asn | Ser | Phe | Leu | Ser | Pro | Ser |
|     | 610 |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |     |
| Val | Ser | Ile | Arg | Gly | Lys | Ala | Leu | Ser | Ser | Lys | Ser | Glu | Lys | Leu | Cys |
| 625 |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |     |
| Gly | Ile | Val | Ser | Asp | Met | Leu | Thr | Ser | Val | Asp | Phe | Thr | Asp | Ile | Pro |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     | 655 |     |     |     |
| Arg | Ile | Arg | Glu | Leu | Leu | Met | Gln | His | Asn | Glu | Ala | Leu | Thr | Asn | Ser |
|     |     | 660 |     |     |     | 665 |     |     |     |     |     | 670 |     |     |     |
| Val | Arg | Asn | Ser | Pro | Met | Ser | Tyr | Ala | Val | Ser | Met | Ala | Cys | Ser | Gly |
|     | 675 |     |     |     | 680 |     |     |     |     |     | 685 |     |     |     |     |
| Asn | Ser | Ile | Thr | Gly | Ala | Met | Ser | Tyr | Leu | Thr | Thr | Gly | Leu | Pro | Tyr |
|     | 690 |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |     |
| Val | Lys | Lys | Ile | Arg | Glu | Leu | Thr | Lys | Asn | Phe | Asp | Gln | Asn | Ile | Asp |
| 705 |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |     |
| Glu | Ala | Val | Val | Ile | Leu | Gln | Arg | Leu | Tyr | Thr | Lys | Cys | Phe | Ser | Gly |
|     |     |     | 725 |     |     |     |     | 730 |     |     |     | 735 |     |     |     |
| Lys | Arg | Gln | Ile | Val | Ile | Ser | Gly | Ser | Ala | His | Asn | Tyr | Gln | Gln | Leu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Lys | Glu | Leu | Ala | Ser | Val | Met | Asn | Leu | Pro | Val | Ser | Leu | Ala | Cys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Leu | Leu | Ser | Gly | Cys | Val | Phe | Phe | Leu | Gly | Val | Phe | Val | Ser | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Leu | Tyr | Ala | Arg | Lys | Lys | Arg | Ala | Phe | Leu | Glu | Lys | Ile | Gln | Lys |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Glu | His | Glu | Asn | Gln | Leu | Leu | Gln | Thr | Ser | Leu | Asn | Leu | Ser | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| His | Gln | Glu | Gln | Leu | Ile | Glu | Asp | Phe | Ser | Asn | Arg | Leu | Ala | Leu | Ser |
|     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Ser | His | Lys | Leu | Ile | Lys | Asp | Met | Lys | Glu | Glu | Ala | Gln | Asn | Tyr | Phe |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gly | Asp | Thr | Ser | Lys | Ser | Phe | Gln | Ser | Ile | Leu | Ser | Pro | Ile | Gln | Thr |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Thr | Leu | Thr | Thr | Phe | Lys | Gln | Ser | Leu | Glu | Thr | Phe | Glu | Thr | Lys | His |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Ala | Glu | Asp | Arg | Gly | Arg | Leu | Lys | Glu | Gln | Ile | Ser | Gln | Leu | Leu | Ala |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Val | Glu | Lys | Lys | Leu | Glu | His | Glu | Thr | His | Val | Leu | Thr | Asp | Ile | Leu |
|     | 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Lys | His | Pro | Gly | Ser | Arg | Gly | Arg | Trp | Gly | Glu | Ile | Gln | Leu | Glu | Arg |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ile | Leu | Glu | Leu | Ala | Gly | Met | Leu | Lys | Tyr | Cys | Asp | Tyr | Asp | Ser | Gln |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Thr | Thr | Ser | Ala | Gln | Gly | Ala | Phe | Arg | Ala | Asp | Ile | Ile | Ile | Arg | Leu |
|     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Pro | Gln | Asp | Arg | Cys | Leu | Ile | Ile | Asp | Ala | Lys | Ala | Pro | Ile | Ser | Asp |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |

Ser Tyr Phe Ser Val Glu Ile Asp Lys Gly Asp Leu Val Asp Lys  
 235 230 235 240  
 Ile Lys Glu His Ile Lys Thr Leu Lys Ser Lys Ser Tyr Trp Glu Lys  
 245 250 255  
 Phe His Gln Ser Pro Glu Tyr Val Ile Leu Phe Leu Pro Gly Glu Ser  
 260 265 270  
 Leu Phe Asn Asp Ala Ile Arg Leu Ala Pro Glu Leu Met Glu Ile Gly  
 275 280 285  
 Ala Ser Ser Asn Val Ile Leu Ser Ser Pro Leu Thr Leu Leu Ala Leu  
 290 295 300  
 Leu Lys Thr Ile Ala Tyr Met Trp Lys Gln Glu Asn Leu Gln Lys Gln  
 305 310 315 320  
 Ile Gln Glu Val Ser Leu Leu Gly Lys Glu Leu His Arg Arg Leu Gln  
 325 330 335  
 Val Val Phe Thr His Phe Gln Lys Ile Gly Lys Asn Leu Asn Gln Thr  
 340 345 350  
 Val Gln Ser Tyr Asn Asp Met Thr Ser Ser Phe Gln Tyr Arg Val Leu  
 355 360 365  
 Pro Thr Leu Arg Lys Phe Glu Gly Leu Glu Thr Ser Ser Ser His Gln  
 370 375 380  
 Ile Glu Glu Pro Thr Pro Ile Glu Ser Leu Ala Thr Ser Phe Pro His  
 385 390 395 400  
 Thr Cys Asp Ile Asp Thr Asn Leu Ala Val Ile Glu Ser Leu Glu Lys  
 405 410 415  
 Gln Asp

&lt;210&gt;1057

&lt;211&gt;265

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1057

Met Ala Gly Leu Asp Leu Glu Ala Arg Gly Lys Arg Arg Val Val Thr  
 1 5 10 15  
 Pro Asn Ala Ile Thr Ala Phe Gly Leu Cys Cys Gly Leu Phe Ile Ile  
 20 25 30  
 Phe Lys Ser Val Leu Arg Thr Ser Ser Ser Val Glu Leu Phe His Arg  
 35 40 45  
 Leu Gln Gly Leu Ser Leu Leu Ile Ser Ala Met Ile Ala Asp Phe  
 50 55 60  
 Ser Asp Gly Ala Ile Ala Arg Ile Met Lys Ala Glu Ser Ala Phe Gly  
 65 70 75 80  
 Ala Gln Phe Asp Ser Leu Ser Asp Ala Val Thr Phe Gly Ile Ala Pro  
 85 90 95  
 Pro Leu Ile Ala Ile Lys Ser Leu Asp Gly Ile Tyr Val Gly Asn Phe  
 100 105 110  
 Phe Ser Ser Leu Leu Leu Ile Thr Ser Ile Ile Tyr Ser Leu Cys Gly  
 115 120 125  
 Val Leu Arg Leu Val Arg Tyr Asn Leu Phe Ser Gln Lys Thr Val Asp  
 130 135 140  
 Val Ser Lys Pro Tyr Cys Phe Ile Gly Leu Pro Ile Pro Ala Ala Ala  
 145 150 155 160  
 Ala Ser Ile Val Ser Leu Ala Leu Phe Leu Ala Ser Asp Phe Phe Pro  
 165 170 175  
 Asp Leu Pro Ala Gln Leu Arg Val Gly Leu Leu Ser Phe Ala Leu Leu  
 180 185 190  
 Phe Ile Gly Gly Leu Met Ile Ser Pro Trp Lys Phe Pro Gly Val Lys  
 195 200 205  
 His Phe Arg Phe Asn Val Ser Ser Phe Leu Leu Val Val Thr Ile Gly  
 210 215 220  
 Leu Ala Ala Cys Leu Phe Ser Gly Leu Val Asp His Phe Val Glu  
 225 230 235 240  
 Val Phe Phe Leu Val Ser Trp Leu Tyr Thr Leu Val Gly Phe Pro Ile  
 245 250 255  
 Phe Ser Ile Ile Tyr Arg Lys Lys Ser

260

265

&lt;210&gt;1058

&lt;211&gt;1047

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1058

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Val | Met | Val | Glu | Val | Glu | Glu | Lys | His | Tyr | Thr | Ile | Val | Lys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Asn | Gly | Met | Phe | Val | Pro | Phe | Asn | Gln | Asp | Arg | Ile | Phe | Gln | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Glu | Ala | Ala | Phe | Arg | Asp | Thr | Arg | Ser | Leu | Glu | Thr | Ser | Ser | Pro |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Pro | Lys | Asp | Leu | Glu | Glu | Ser | Ile | Ala | Gln | Ile | Thr | His | Lys | Val |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Val | Lys | Glu | Val | Leu | Ala | Lys | Ile | Ser | Glu | Gly | Gln | Val | Val | Thr | Val |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     |     | 80  |
| Glu | Arg | Ile | Gln | Asp | Leu | Val | Glu | Ser | Gln | Leu | Tyr | Ile | Ser | Gly | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Gln | Asp | Val | Ala | Arg | Asp | Tyr | Ile | Val | Tyr | Arg | Asp | Gln | Arg | Lys | Ala |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Arg | Gly | Asn | Ser | Ser | Ser | Ile | Ile | Ala | Ile | Ile | Arg | Arg | Asp | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gly | Ser | Ala | Lys | Phe | Asn | Pro | Met | Lys | Ile | Ser | Ala | Ala | Leu | Glu | Lys |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ala | Phe | Arg | Ala | Thr | Leu | Gln | Ile | Asn | Gly | Met | Thr | Pro | Pro | Ala | Thr |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |
| Leu | Ser | Glu | Ile | Asn | Asp | Leu | Thr | Leu | Arg | Ile | Val | Glu | Asp | Val | Leu |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ser | Leu | His | Gly | Glu | Glu | Ala | Ile | Asn | Leu | Glu | Glu | Ile | Gln | Asp | Ile |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Val | Glu | Lys | Gln | Leu | Met | Val | Ala | Gly | Tyr | Tyr | Asp | Val | Ala | Lys | Asn |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Tyr | Ile | Leu | Tyr | Arg | Glu | Ala | Arg | Ala | Arg | Ala | Arg | Ala | Asn | Lys | Asp |
|     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |     |
| Gln | Asp | Gly | Gln | Glu | Glu | Phe | Val | Pro | Gln | Glu | Glu | Thr | Tyr | Val | Val |
| 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     |     | 240 |
| Gln | Lys | Glu | Asp | Gly | Thr | Thr | Tyr | Leu | Leu | Arg | Lys | Thr | Asp | Leu | Glu |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Lys | Arg | Phe | Ser | Trp | Ala | Cys | Lys | Arg | Phe | Pro | Lys | Thr | Thr | Asp | Ser |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |     |
| Gln | Leu | Leu | Ala | Asp | Met | Ala | Phe | Met | Asn | Leu | Tyr | Ser | Gly | Ile | Lys |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Glu | Asp | Glu | Val | Thr | Thr | Ala | Cys | Ile | Met | Ala | Ala | Arg | Ala | Asn | Ile |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Glu | Arg | Glu | Pro | Asp | Tyr | Ala | Phe | Ile | Ala | Ala | Glu | Leu | Leu | Thr | Ser |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     |     | 320 |
| Ser | Leu | Tyr | Glu | Glu | Thr | Leu | Gly | Cys | Ser | Ser | Gln | Asp | Pro | Asn | Leu |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |
| Ser | Glu | Ile | His | Lys | Lys | His | Phe | Lys | Glu | Tyr | Ile | Leu | Asn | Gly | Glu |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     |     | 350 |     |     |
| Glu | Tyr | Arg | Leu | Asn | Pro | Gln | Leu | Lys | Asp | Tyr | Asp | Leu | Asp | Ala | Leu |
|     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |
| Ser | Glu | Val | Leu | Asp | Leu | Ser | Arg | Asp | Gln | Gln | Phe | Ser | Tyr | Met | Gly |
|     | 370 |     |     |     | 375 |     |     |     |     |     | 380 |     |     |     |     |
| Val | Gln | Asn | Leu | Tyr | Asp | Arg | Tyr | Phe | Asn | Leu | His | Glu | Gly | Arg | Arg |
| 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     |     | 400 |
| Leu | Glu | Thr | Ala | Gln | Ile | Phe | Trp | Met | Arg | Val | Ser | Met | Gly | Leu | Ala |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |     |
| Leu | Asn | Glu | Gly | Glu | Gln | Lys | Asn | Phe | Trp | Ala | Ile | Thr | Phe | Tyr | Asn |
|     | 420 |     |     |     |     |     | 425 |     |     |     |     |     | 430 |     |     |
| Leu | Leu | Ser | Thr | Phe | Arg | Tyr | Thr | Pro | Ala | Thr | Pro | Thr | Leu | Phe | Asn |
|     | 435 |     |     |     |     | 440 |     |     |     |     |     | 445 |     |     |     |
| Ser | Gly | Met | Arg | His | Ser | Gln | Leu | Ser | Ser | Cys | Tyr | Leu | Ser | Thr | Val |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |

Lys Asp Asp Leu Ser His Ile Tyr Lys Val Ile Ser Asp Asn Ala Leu  
 465 470 475 480  
 Leu Ser Lys Trp Ala Gly Gly Ile Gly Asn Asp Trp Thr Asp Val Arg  
 485 490 495  
 Ala Thr Gly Ala Val Ile Lys Gly Thr Asn Gly Lys Ser Gln Gly Val  
 500 505 510  
 Ile Pro Phe Ile Lys Val Ala Asn Asp Thr Ala Ile Ala Val Asn Gln  
 515 520 525  
 Gly Gly Lys Arg Lys Gly Ala Met Cys Val Tyr Leu Glu Asn Trp His  
 530 535 540  
 Leu Asp Tyr Glu Asp Phe Leu Glu Leu Arg Lys Asn Thr Gly Asp Glu  
 545 550 555 560  
 Arg Arg Arg Thr His Asp Ile Asn Thr Ala Ser Trp Ile Pro Asp Leu  
 565 570 575  
 Phe Phe Lys Arg Leu Glu Lys Lys Gly Met Trp Thr Leu Phe Ser Pro  
 580 585 590  
 Asp Asp Val Pro Gly Leu His Glu Ala Tyr Gly Leu Glu Phe Glu Lys  
 595 600 605  
 Leu Tyr Glu Glu Tyr Glu Arg Lys Val Glu Ser Gly Glu Ile Arg Leu  
 610 615 620  
 Tyr Lys Lys Val Glu Ala Glu Val Leu Trp Arg Lys Met Leu Ser Met  
 625 630 635 640  
 Leu Tyr Glu Thr Gly His Pro Trp Ile Thr Phe Lys Asp Pro Ser Asn  
 645 650 655  
 Ile Arg Ser Asn Gln Asp His Val Gly Val Val Arg Cys Ser Asn Leu  
 660 665 670  
 Cys Thr Glu Ile Leu Leu Asn Cys Ser Glu Ser Glu Thr Ala Val Cys  
 675 680 685  
 Asn Leu Gly Ser Ile Asn Leu Val Glu His Ile Arg Asn Asp Lys Leu  
 690 695 700  
 Asp Glu Glu Lys Leu Lys Glu Thr Ile Ser Ile Ala Ile Arg Ile Leu  
 705 710 715 720  
 Asp Asn Val Ile Asp Leu Asn Phe Tyr Pro Thr Pro Glu Ala Lys Gln  
 725 730 735  
 Ala Asn Leu Thr His Arg Ala Val Gly Leu Gly Val Met Gly Phe Gln  
 740 745 750  
 Asp Val Leu Tyr Glu Leu Asn Ile Ser Tyr Ala Ser Gln Glu Ala Val  
 755 760 765  
 Glu Phe Ser Asp Glu Cys Ser Glu Ile Ile Ala Tyr Tyr Ala Ile Leu  
 770 775 780  
 Ala Ser Ser Leu Leu Ala Lys Glu Arg Gly Thr Tyr Ala Ser Tyr Ser  
 785 790 795 800  
 Gly Ser Lys Trp Asp Arg Gly Tyr Leu Pro Leu Asp Thr Ile Glu Leu  
 805 810 815  
 Leu Lys Glu Thr Arg Gly Glu His Asn Val Leu Val Asp Thr Ser Ser  
 820 825 830  
 Lys Lys Asp Trp Thr Pro Val Arg Asp Thr Ile Gln Lys Tyr Gly Met  
 835 840 845  
 Arg Asn Ser Gln Val Met Ala Ile Ala Pro Thr Ala Thr Ile Ser Asn  
 850 855 860  
 Ile Ile Gly Val Thr Gln Ser Ile Glu Pro Met Tyr Lys His Leu Phe  
 865 870 875 880  
 Val Lys Ser Asn Leu Ser Gly Glu Phe Thr Ile Pro Asn Thr Tyr Leu  
 885 890 895  
 Ile Lys Lys Leu Lys Glu Leu Gly Leu Trp Asp Ala Glu Met Leu Asp  
 900 905 910  
 Asp Leu Lys Tyr Phe Asp Gly Ser Leu Leu Glu Ile Glu Arg Ile Pro  
 915 920 925  
 Asn His Leu Lys Lys Leu Phe Leu Thr Ala Phe Glu Ile Glu Pro Glu  
 930 935 940  
 Trp Ile Ile Glu Cys Thr Ser Arg Arg Gln Lys Trp Ile Asp Met Gly  
 945 950 955 960  
 Val Ser Leu Asn Leu Tyr Leu Ala Glu Pro Asp Gly Lys Lys Leu Ser  
 965 970 975

Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu Lys Thr Thr Tyr Tyr  
 980 985 990  
 Leu Arg Ser Gln Ala Ala Thr Ser Val Glu Lys Ser Phe Ile Asp Ile  
 995 1000 1005  
 Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser  
 1010 1015 1020  
 Thr Ser Ile Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu  
 1025 1030 1035 1040  
 Glu Gly Cys Glu Ser Cys Gln  
 1045

&lt;310&gt;1059

&lt;211&gt;365

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1059

Leu Phe Asn Gly Arg Arg Leu Arg Ile Leu Ser Ile Thr Glu Lys Arg  
 1 5 10 15  
 Gly Ala Lys Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val  
 20 25 30  
 Glu Val Ser Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn  
 35 40 45  
 Gln Leu Val Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn  
 50 55 60  
 Gly Cys Ala Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp  
 65 70 75 80  
 Ile Glu Leu Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val  
 85 90 95  
 Ile Leu Leu Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly  
 100 105 110  
 Asn Asn Ile Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala  
 115 120 125  
 Arg Gln Tyr Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His  
 130 135 140  
 Thr Phe Leu Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val  
 145 150 155 160  
 Phe Asn Ala Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe  
 165 170 175  
 Gln Met Thr Leu Thr Val Asp Val Leu Asp Pro Asp Phe Ser Val Gln  
 180 185 190  
 Ser Ser Glu Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr  
 195 200 205  
 Ile Ile Met Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu  
 210 215 220  
 Ser Phe His Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln  
 225 230 235 240  
 Tyr Ile Leu Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu  
 245 250 255  
 Ile Asn Gly Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu  
 260 265 270  
 Gln Glu Glu Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile  
 275 280 285  
 Glu Tyr Ala Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser  
 290 295 300  
 Ser Met Phe Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu  
 305 310 315 320  
 Arg Ile Gly Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp  
 325 330 335  
 Met Ser Glu Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr  
 340 345 350  
 Arg Val Thr Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp  
 355 360 365

&lt;310&gt;1060

&lt;311&gt;328

&lt;212&gt;PRT



&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1060

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Phe Leu Leu Phe Met Lys Pro Gln Asp Leu Ser Pro Pro Phe Leu Trp
 1           5           10           15
Lys Glu Arg Arg Pro Cys Ile Gln Asp Gly Val Leu Tyr Val Pro Arg
           20           25           30
His Tyr Phe Glu His Gln Asn Phe Ser Thr Ser Tyr His Gln Glu Phe
           35           40           45
Phe Gln Asn His Thr Ser Ile Ala Cys Glu Leu Cys Ser Gly Asn Gly
           50           55           60
Asp Trp Val Val Ala Gln Ala Gln Lys Asp Pro Gln Val Leu Trp Ile
           65           70           75           80
Ala Val Glu Gln Arg Phe Asp Arg Val Arg Lys Ile Trp Ser Lys Met
           85           90           95
Ile Asn His Gln Ile Gln Asn Leu Arg Ile Val Cys Gly Thr Ala Glu
           100          105          110
Thr Phe Phe Gln Tyr Tyr Val Pro Asp Gln Phe Leu Gln Arg Leu Val
           115          120          125
Val Asn Phe Pro Asp Pro Trp Pro Lys Met Arg His Arg Lys His Arg
           130          135          140
Leu Leu Gln Pro Ser Phe Val Gln Glu Ile Ser Arg Ser Leu Gln Asp
           145          150          155          160
Ser Ala Val Phe Ala Leu Ala Thr Asp Asp Lys Thr Tyr Leu Leu Glu
           165          170          175
Ser Ile Glu Ala Leu Gln Thr His Leu Ala Pro Arg Met Glu Thr Pro
           180          185          190
Tyr Tyr Ile Lys Met Thr Asp Thr Tyr Gly Asn Ser Trp Phe Glu Asn
           195          200          205
Leu Trp Arg Thr Lys Gly Gln Glu Ile Phe Tyr Thr Glu Phe Ile Lys
           210          215          220
Lys Ala Gly Ile
           225

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&lt;210&gt;1061

&lt;211&gt;175

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1061

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Met Phe Ala Tyr Arg Thr Leu Leu Thr His Asn Val Val Gln Val Ser
 1           5           10           15
His Glu Ile Phe Lys Thr Thr Val Val Pro Gly Asp Thr Val Ile Asp
           20           25           30
Ala Thr Cys Gly Asn Gly Asn Asp Ser Leu Phe Leu Ala Arg Leu Leu
           35           40           45
Gln Gly Glu Gly Arg Leu Val Val Tyr Asp Ile Glu Lys Glu Ala Leu
           50           55           60
Ser Asn Ala Leu Leu Leu Phe Glu Thr His Leu Ser Glu Gln Glu Arg
           65           70           75           80
Ser Val Ile Glu Met Lys Glu Gln Ser His Glu His Ile Leu Glu Lys
           85           90           95
Asp Val Lys Leu Ile His Tyr Asn Leu Gly Tyr Leu Pro Lys Gly Asn
           100          105          110
Lys Glu Ile Thr Thr Leu Ala Arg Thr Thr Glu Ile Ser Leu Glu Tyr
           115          120          125
Ala Leu Asn Ile Val Arg Pro Asp Gly Leu Ile Thr Val Val Cys Tyr
           130          135          140
Pro Gly His Pro Glu Gly Glu Lys Glu Thr His Ser Val Glu Ser Leu
           145          150          155          160
Ala Gln Arg Leu His Pro Lys Glu Trp Cys Val Ser His Phe Met
           165          170          175

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&lt;210&gt;1062

&lt;211&gt;97

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1062

Arg Ser Pro Ile Arg Ser Leu Leu Leu Ala Val Phe Ser Val Ile Leu  
 1 5 10 15  
 Lys Glu Leu Leu Leu Ala Ser Leu Leu Thr Gln Pro Gly Leu Lys Gly  
 20 25 30  
 Leu Ala Ile Gly Gly Ala Gln Ile Ser Pro Leu His Ala Asn Phe Ile  
 35 40 45  
 Ile Asn Thr Gly Lys Ala Thr Ser Asp Glu Val Lys Gln Leu Ile Ala  
 50 55 60  
 Ile Ile Gln Ser Thr Leu Lys Thr Gln Gly Ile Asp Leu Glu His Glu  
 65 70 75 80  
 Ile Arg Ile Ile Pro Tyr Gln Pro Lys Ile His Ser Pro Val Ser Glu  
 85 90 95

Lys

&lt;210&gt;1063

&lt;211&gt;263

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1063

Met Lys Glu Ala Ala Pro Met His Phe Pro Phe Pro Val Arg Arg Ser  
 1 5 10 15  
 Val Trp Leu Asn Arg Tyr Ser Thr Phe Arg Ile Gly Gly Pro Ala Asn  
 20 25 30  
 Tyr Phe Lys Ala Ile His Thr Ile Glu Glu Ala Arg Glu Val Ile Arg  
 35 40 45  
 Phe Leu His Ser Ile Asn Tyr Pro Phe Leu Ile Ile Gly Lys Gly Ser  
 50 55 60  
 Asn Cys Leu Phe Asp Asp Arg Gly Phe Asp Gly Phe Val Leu Tyr Asn  
 65 70 75 80  
 Ala Ile Tyr Gly Lys Gln Phe Leu Glu Asp Ala Arg Ile Lys Ala Tyr  
 85 90 95  
 Ser Gly Leu Ser Phe Ala Ala Leu Gly Lys Ala Thr Ala Tyr Asn Gly  
 100 105 110  
 Tyr Ser Gly Leu Glu Phe Ala Ala Gly Ile Pro Gly Ser Val Gly Gly  
 115 120 125  
 Ala Ile Phe Met Asn Ala Gly Thr Asn Glu Ser Asp Ile Ser Ser Val  
 130 135 140  
 Val Arg Asn Val Glu Thr Ile Asn Ser Glu Gly Glu Leu Cys Ser Tyr  
 145 150 155 160  
 Ser Val Glu Glu Leu Glu Leu Ser Tyr Arg Ser Ser Arg Phe His Arg  
 165 170 175  
 Gln Gln Glu Phe Ile Leu Ser Ala Thr Phe Gln Leu Ser Lys Lys Gln  
 180 185 190  
 Val Ser Ala Asp His Ser Lys Ser Ile Leu Gln His Arg Leu Met Thr  
 195 200 205  
 Gln Pro Tyr Thr Gln Pro Ser Ala Gly Cys Ile Phe Arg Asn Pro Glu  
 210 215 220  
 Gly Thr Ser Ala Gly Lys Leu Ile Asp Ala Ala Trp Val Glu Gly Ile  
 225 230 235 240  
 Ser Asn Arg Arg Gly Thr Asn Phe Ser Val Ala Cys Lys Leu His Tyr  
 245 250 255  
 Gln Tyr Trp Gln Gly His Phe  
 260

&lt;210&gt;1064

&lt;211&gt;179

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1064

Leu Arg Thr Ser Leu Ala Val Lys Cys Val Leu Leu Thr Ile Phe Trp  
 1 5 10 15  
 Leu Leu Val Met Ala Thr Leu Ser Pro Glu Lys Phe Ser Gly Ser Pro  
 20 25 30  
 Ile Ser Ile Ser Lys Glu Phe Pro Gln Gln Lys Met Arg Glu Ile Ile  
 35 40 45

Leu Gln Met Leu Tyr Ala Leu Asp Met Ala Pro Ser Ala Asp Ser  
 50 55 60  
 Leu Val Pro Leu Leu Met Ser Gln Thr Ala Val Ser Gln Lys His Val  
 65 70 75 80  
 Leu Val Ala Leu Asn Gln Thr Lys Ser Ile Leu Glu Lys Ser Gln Glu  
 85 90 95  
 Leu Asp Leu Ile Ile Gly Asn Ala Leu Lys Asn Lys Ser Phe Asp Ser  
 100 105 110  
 Leu Asp Leu Val Glu Lys Asn Val Leu Arg Leu Thr Leu Phe Glu His  
 115 120 125  
 Phe Tyr Ser Pro Pro Ile Asn Lys Ala Ile Leu Ile Ala Glu Ala Ile  
 130 135 140  
 Arg Leu Val Lys Lys Phe Ser Tyr Ser Glu Ala Cys Pro Phe Ile Gln  
 145 150 155 160  
 Ala Ile Leu Asn Asp Ile Phe Thr Asp Ser Ser Leu Asn Glu Asn Ser  
 165 170 175  
 Leu Ser Ile

&lt;210&gt;1065

&lt;211&gt;187

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1065

Ser Val Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys  
 1 5 10 15  
 Val Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile  
 20 25 30  
 Lys Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu  
 35 40 45  
 Val Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr Gly  
 50 55 60  
 Lys Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala  
 65 70 75 80  
 Gln His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp  
 85 90 95  
 Glu Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu  
 100 105 110  
 Lys Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu  
 115 120 125  
 Ala Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly  
 130 135 140  
 Leu Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg  
 145 150 155 160  
 Ser Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys  
 165 170 175  
 Gln Glu Lys Ser His Ala Gln Asp Glu Asn Gln  
 180 185

&lt;210&gt;1066

&lt;211&gt;121

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1066

Met Val Arg Ala Thr Gly Ser Val Ala Ser Arg Arg Arg Arg Lys Arg  
 1 5 10 15  
 Ile Leu Lys Gln Ala Lys Gly Phe Trp Gly Asp Arg Lys Gly His Ile  
 20 25 30  
 Arg Gln Ser Arg Ser Ser Val Met Arg Ala Met Ala Phe Asn Tyr Met  
 35 40 45  
 His Arg Lys Asp Arg Lys Gly Asp Phe Arg Ser Leu Trp Ile Ala Arg  
 50 55 60  
 Leu Asn Val Ala Ser Arg Ile His Ser Leu Ser Tyr Ser Arg Leu Ile  
 65 70 75 80  
 Asn Gly Leu Lys Cys Ala Asn Ile Ser Leu Asn Arg Lys Met Leu Ser  
 85 90 95

Glu Ile Ala Ile His Asn Pro Glu Gly Phe Ala Glu Ile Ala Asn Gln  
 100 105 110  
 Ala Lys Lys Ala Leu Glu Ala Thr Val  
 115 120

&lt;210&gt;1067

&lt;211&gt;339

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1067

Met Glu Met Lys Glu Glu Ile Glu Ala Val Lys Gln Gln Phe His Ser  
 1 5 10 15  
 Glu Leu Asp Gln Val Asn Ser Ser Gln Ala Leu Ala Asp Leu Lys Val  
 20 25 30  
 Arg Tyr Leu Gly Lys Lys Gly Ile Phe Arg Ser Phe Ser Glu Lys Leu  
 35 40 45  
 Lys Gln Cys Thr Asp Lys Ala Lys Leu Gly Ser Leu Ile Asn Asp Phe  
 50 55 60  
 Lys Thr Tyr Val Glu Asp Leu Leu Gln Glu Lys Ser Leu Val Leu Leu  
 65 70 75 80  
 Ala Ser Glu Gln Ala Glu Ala Phe Ser Lys Glu Lys Ile Asp Ser Ser  
 85 90 95  
 Leu Pro Gly Asp Ser Gln Pro Ser Gly Gly Arg His Ile Leu Lys Ser  
 100 105 110  
 Ile Leu Asp Asp Val Val Asp Ile Phe Val His Leu Gly Phe Cys Val  
 115 120 125  
 Arg Glu Ala Pro Asn Ile Glu Ser Glu Ala Asn Asn Phe Thr Leu Leu  
 130 135 140  
 Asn Phe Thr Glu Asp His Pro Ala Arg Gln Met His Asp Thr Phe Tyr  
 145 150 155 160  
 Leu Asn Ala Thr Thr Val Leu Arg Thr His Thr Ser Asn Val Gln Ala  
 165 170 175  
 Arg Glu Leu Lys Lys Gln Gln Pro Pro Ile Lys Val Val Ala Pro Gly  
 180 185 190  
 Leu Cys Phe Arg Asn Glu Asp Ile Ser Ala Arg Ser His Val Leu Phe  
 195 200 205  
 His Gln Val Glu Ala Phe Tyr Val Asp His Asn Val Thr Phe Ser Asp  
 210 215 220  
 Leu Thr Ala Ile Leu Ser Ala Phe Tyr His Ser Phe Phe Gln Arg Lys  
 225 230 235 240  
 Thr Glu Leu Arg Phe Arg His Ser Tyr Phe Pro Phe Val Glu Pro Gly  
 245 250 255  
 Ile Glu Val Asp Val Ser Cys Glu Cys Cys Gly Lys Gly Cys Ala Leu  
 260 265 270  
 Cys Lys His Thr Gly Trp Leu Glu Val Ala Gly Ala Gly Met Ile His  
 275 280 285  
 Pro Gln Val Leu Arg Asn Gly Asn Val Asp Pro Glu Ile Tyr Ser Gly  
 290 295 300  
 Tyr Ala Val Gly Met Gly Ile Glu Arg Leu Ala Met Leu Lys Tyr Gly  
 305 310 315 320  
 Val Ser Asp Ile Arg Leu Phe Ser Glu Asn Asp Leu Arg Phe Leu Gln  
 325 330 335  
 Gln Phe Ser

&lt;210&gt;1068

&lt;211&gt;690

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1068

Leu Phe Trp Phe His Arg Gly Gly Arg Met Lys Arg Ser Arg Arg Asn  
 1 5 10 15  
 Phe Glu Gln Ala Leu Glu Asn Leu Glu Lys Leu Lys Glu Ile Ser Leu  
 20 25 30  
 Ala Thr Ser Asn Asp Ser Tyr Leu Asn Asn Pro Ala Arg Phe Asn Gln  
 35 40 45

Arg Lys Gln Thr Gly Ser Ser Val Met Glu Met Lys Glu Ala Leu Lys  
 50 55 60  
 Asn Val Glu Asn Tyr Leu Leu Glu Ile Ser Cys Val Ser Lys Ser His  
 65 70 75 80  
 Ala Asp Lys Ala Leu Lys Glu Ser Asp Phe Leu Ile Ala Gly Val Gln  
 85 90 95  
 Asn Val Phe Ser Phe Leu Glu Asn Gln Glu Asp Leu Tyr Lys Ser Leu  
 100 105 110  
 Leu Asp Glu Tyr Ser Glu Val Thr Lys Ala Tyr Asp Glu Val Lys Lys  
 115 120 125  
 Asn Leu Lys Glu Val Pro Thr Tyr Asp Leu Ser Thr Asp Glu Glu Thr  
 130 135 140  
 Glu Glu His Lys Glu Pro Glu Cys Phe Leu Asn Asn Leu Val Glu Val  
 145 150 155 160  
 Lys Arg Asp Arg Ser Tyr Glu Leu Phe Tyr Met Leu Asp Glu Gln Asp  
 165 170 175  
 Lys Arg Phe Tyr Asn Asp Ala Leu Val Gln Ile Ile Tyr Lys Gln Asn  
 180 185 190  
 Lys Leu His Glu Thr Val Asn Glu Gly Asp Pro Leu Thr Lys Thr Leu  
 195 200 205  
 Leu Trp Asn Ser Glu Glu Val Lys Asn Ile Ala Ser Ser Leu Val Ile  
 210 215 220  
 Val Asn Asp Met Pro Leu Arg Leu Phe Tyr Gln Arg Ala Leu Ser His  
 225 230 235 240  
 Leu Asp Ile Glu Ala Val Val Lys Val His Asn Ala Val Met Ala Leu  
 245 250 255  
 Phe Phe Ser Arg Tyr Glu Ala Thr Met Val Phe Lys Ser Pro Lys Lys  
 260 265 270  
 His Asn Ile Trp Tyr Phe Asn Asp Phe Leu Leu Phe Leu Arg Glu Ala  
 275 280 285  
 Trp Lys Asp Leu Asn Asn Asn Val Ile Asp Ser Gln Glu Arg Lys Gln  
 290 295 300  
 Thr Lys Leu Leu Ala Ser Ala Leu Ser Leu Gly Ile Phe Glu Ser Lys  
 305 310 315 320  
 Leu Val Phe Glu Glu Ala Ser Arg Tyr Leu Tyr Phe Asn Ile Gln Thr  
 325 330 335  
 Lys Leu Glu Asn Ala Asn Gly Lys Lys Pro Leu Ser Pro Gly Gln Tyr  
 340 345 350  
 Leu Thr Asp Ala Tyr Glu Glu Leu His Arg Leu Ile Ser Lys Tyr Pro  
 355 360 365  
 Asn Gly Pro Leu Phe Lys Ala Met Asp Arg Val Leu Glu His Glu Ser  
 370 375 380  
 Arg Pro Tyr Asp Pro Met Ile Leu Gly Ile Leu Pro Ser Leu Glu Gly  
 385 390 395 400  
 Thr Leu Lys Leu His Gly Lys Ser Ile Asp Ile Ile Arg Ser Pro Ser  
 405 410 415  
 Pro Val Thr Gln Ser Ser Ile Leu Tyr Ala Asn Cys Asn Glu Glu Phe  
 420 425 430  
 Leu Gly Phe Leu Asn Ala Lys Ala His Arg Ser Glu Val Thr Leu Val  
 435 440 445  
 Leu Asn Ile Gln Asn Arg Ile Ser Arg Lys Glu Arg Ala Arg Ser Arg  
 450 455 460  
 Val Ile Glu Glu Ala Leu Glu Gln Glu Glu His Ala Pro Tyr Val His  
 465 470 475 480  
 Ala Phe Ser Phe Pro Glu Pro Glu Glu Leu Leu Gln Asn Leu Glu Ser  
 485 490 495  
 Ile His Gly Asp Ile Glu Thr Phe Ala Asp Phe Phe Ser Ile Leu Gln  
 500 505 510  
 Glu Glu Phe His Lys Pro Leu Leu Ala Ser Ser Phe Phe Leu Thr Lys  
 515 520 525  
 Glu Leu Lys Glu Phe Val Gly Ser Phe Leu Lys Glu Lys Leu Thr Ala  
 530 535 540  
 Leu Lys Asp Ile Phe Phe Ala Lys Lys Lys Ile Leu Phe Arg Asn Asp  
 545 550 555 560

Lys Leu Leu Leu Leu His Leu Leu Ser Tyr Leu Ile Val Phe Lys Leu  
 565 570 575  
 Ile Glu Arg Thr Asn Pro Asn Ser Ile Val Val Val Ser Lys Asp Gly  
 580 585 590  
 Leu Asp Tyr Val Ser Val Phe Ile Ala Gly Ph Ala Phe Phe Ser Arg  
 595 600 605  
 Glu Ala Phe Trp Asp Glu His Ser Leu Lys Leu Leu Leu Thr Asn Val  
 610 615 620  
 Leu Ser Pro Thr Leu Val Ala Arg Asp Arg Leu Val Phe Val Ser His  
 625 630 635 640  
 Ile Glu Leu Leu Ser Lys Phe Val Asn Cys Leu Lys Lys Asn Arg Gln  
 645 650 655  
 Gly Phe Ser Ser Leu Lys Ser Phe Phe Lys Asp Asp Ile Glu Gly Trp  
 660 665 670  
 Glu Phe Thr Gly Tyr Leu His Glu Leu Thr Glu Val Ser His Lys His  
 675 680 685  
 Asn Leu  
 690  
 <210>1069  
 <211>367  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1069  
 Arg Met Leu Ile Trp Lys Arg His Leu Leu Thr Arg Phe Trp Phe Ala  
 1 5 10 15  
 Leu Thr Ser Leu Leu Val Leu Ala Leu Ile Phe Tyr Ala Ser Ile His  
 20 25 30  
 His Ser Leu His Thr Leu Lys Gly Ala Ser Thr Ala Ala Ser Gly Ala  
 35 40 45  
 Ser Val Lys Leu Ser Ile Leu Tyr Tyr Leu Ala Gln Ile Ser Leu Lys  
 50 55 60  
 Ala Glu Phe Leu Met Pro Gln Leu Val Ala Val Ala Thr Thr Ser Thr  
 65 70 75 80  
 Leu Phe Ala Met Gln Asn Lys Arg Glu Ile Ile Leu Leu Gln Ala Ser  
 85 90 95  
 Gly Leu Ser Leu Lys Ser Leu Met His Pro Leu Leu Leu Ser Gly Ala  
 100 105 110  
 Val Ile Met Met Val Leu Tyr Ala Asn Phe Gln Trp Leu His Pro Ile  
 115 120 125  
 Cys Glu Lys Ile Ser Ile Thr Lys Glu Asn Met Asp Arg Gly Thr Thr  
 130 135 140  
 Asp Lys Glu Gln Gly Lys Ile Pro Ala Leu Tyr Leu Lys Asp Gln Thr  
 145 150 155 160  
 Val Leu Leu Tyr Ser Ser Ile Glu Pro Lys Thr Leu Thr Leu Asn Asn  
 165 170 175  
 Val Phe Trp Ile Lys Asp Pro Lys Thr Ile Tyr Thr Met Gln Lys Leu  
 180 185 190  
 Ala Phe Thr Thr Leu Ser Leu Pro Ile Gly Leu Asn Val Thr Gln Phe  
 195 200 205  
 Phe Ala Asn Asp Ser Glu Asn Leu Glu Leu Lys Glu Phe Phe Asp Met  
 210 215 220  
 Lys Glu Phe Pro Glu Ile Glu Phe Asn Phe Tyr Glu Asn Pro Phe Ser  
 225 230 235 240  
 Lys Leu Phe Ser Ala Gly Asn Lys Asn Arg Leu Ser Glu Phe Phe Lys  
 245 250 255  
 Ala Ile Pro Trp Asn Ala Thr Gly Leu Gly Leu Ser Thr Gln Val Pro  
 260 265 270  
 Gln Arg Ile Leu Ser Leu Leu Ala Gln Phe Tyr Tyr Val Leu Ile Ser  
 275 280 285  
 Pro Leu Ala Cys Met Ala Ala Ile Ile Leu Ser Ala Tyr Leu Cys Leu  
 290 295 300  
 Arg Phe Ser Arg Thr Pro Thr Val Thr Leu Ala Tyr Leu Ile Pro Leu  
 305 310 315 320  
 Gly Thr Val Asn Ile Phe Phe Val Phe Leu Lys Ala Gly Ile Val Leu

325 330 335  
 Ala Ser Ser Ser Val Leu Pro Thr Leu Pro Val Met Ala Phe Pro Leu  
 340 345 350  
 Ile Val Leu Phe Leu Leu Thr Asn Tyr Ala Tyr Ala Lys Leu Gln  
 355 360 365  
 <210>1070  
 <211>358  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1070  
 Ala Met Pro Ile Leu Trp Lys Val Leu Ile Phe Arg Tyr Leu Lys Thr  
 1 5 10 15  
 Ala Ala Phe Cys Thr Leu Ser Leu Ile Cys Ile Ser Ile Ile Ser Ser  
 20 25 30  
 Leu Gln Glu Ile Val Ala Tyr Ile Ala Lys Asp Val Pro Tyr Asp Thr  
 35 40 45  
 Val Leu Arg Leu Met Ala Tyr Gln Ile Pro Tyr Leu Leu Pro Phe Ile  
 50 55 60  
 Leu Pro Gly Ser Cys Phe Val Ser Ala Phe Ser Leu Phe Arg Lys Leu  
 65 70 75 80  
 Ser Asp Asn Asn His Met Thr Phe Leu Arg Ala Ser Gly Ala Ser Gln  
 85 90 95  
 Ser Ile Ile Met Phe Pro Val Leu Met Val Ser Gly Ala Ile Cys Cys  
 100 105 110  
 Leu Asn Phe Tyr Thr Cys Ser Glu Leu Ala Ser Ile Cys Arg Tyr Gln  
 115 120 125  
 Thr Cys Lys Glu Ile Ala Asn Met Ala Met Thr Ser Pro Ala Leu Leu  
 130 135 140  
 Leu Gln Thr Leu Gln Lys Lys Glu Asn Asn Arg Ile Phe Ile Ala Val  
 145 150 155 160  
 Asp His Cys Ala Lys Ser Lys Phe Asp Asn Val Ile Val Ala Leu Lys  
 165 170 175  
 Gly Asn Asn Glu Ile Ser His Val Gly Ile Ile Lys Ser Ile Ile Pro  
 180 185 190  
 Asp Thr Thr Lys Asp Thr Val Lys Ala Lys Asp Val Val Phe Ile Ser  
 195 200 205  
 Lys Leu Pro Asp Ser Leu Thr Glu Ser Ser Ser Pro Ser Ser Gln Arg  
 210 215 220  
 Phe Tyr Ile Glu Thr Leu Asp Glu Leu Leu Ile Pro Lys Ile Thr Ser  
 225 230 235 240  
 Thr Leu Phe Ala Gly Lys Ser Tyr Leu Lys Thr Arg Thr Asp Tyr Leu  
 245 250 255  
 Pro Trp Lys Gln Leu Val Lys Gln Ser Leu Lys His Ser His Leu Pro  
 260 265 270  
 Glu Thr Leu Arg Arg Val Ala Ile Gly Phe Leu Cys Ile Thr Leu Thr  
 275 280 285  
 Tyr Ala Gly Met Ile Leu Gly Ile His Lys Pro Arg Phe Arg Lys Ser  
 290 295 300  
 Ile Ala Leu Tyr Phe Ile Phe Pro Ile Leu Asp Leu Ile Leu Leu Ile  
 305 310 315 320  
 Val Gly Lys Asn Thr Lys Asn Leu Pro Leu Ala Phe Met Leu Phe Val  
 325 330 335  
 Phe Pro Gln Leu Val Ser Trp Val Val Phe Ala Ala Arg Ala Tyr Arg  
 340 345 350  
 Glu Ser Arg Gly Tyr Ala  
 355  
 <210>1071  
 <211>319  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1071  
 Met Val Leu Ser Ser Asp Leu Leu Arg Asp Asp Lys Gln Leu Asp Leu  
 1 5 10 15  
 Phe Phe Ala Ser Leu Asp Val Lys Lys Arg Tyr Leu Leu Ala Leu Ser

20 25 30  
 Gly Gly Ser Asp Ser Leu Phe Leu Phe Tyr Leu Leu Lys Glu Arg Gly  
 35 40 45  
 Val Ser Phe Thr Ala Val His Ile Asp His Gly Trp Arg Ser Thr Ser  
 50 55 60  
 Ala Gln Glu Ala Lys Glu Leu Glu Glu Leu Cys Ala Arg Glu Gly Val  
 65 70 75 80  
 Pro Phe Val Leu Tyr Thr Leu Thr Ala Glu Glu Gln Gly Asp Lys Asp  
 85 90 95  
 Leu Glu Asn Gln Ala Arg Lys Lys Arg Tyr Ala Phe Leu Tyr Glu Ser  
 100 105 110  
 Tyr Arg Gln Leu Asp Ala Gly Gly Ile Phe Leu Ala His His Ala Asn  
 115 120 125  
 Asp Gln Ala Glu Thr Val Leu Lys Arg Leu Leu Glu Ser Ala His Leu  
 130 135 140  
 Thr Asn Leu Lys Ala Met Ala Glu Arg Ser Tyr Val Glu Asp Val Leu  
 145 150 155 160  
 Leu Leu Arg Pro Leu Leu His Ile Pro Lys Ser Ser Leu Lys Glu Ala  
 165 170 175  
 Leu Asp Ala Arg Gly Ile Ser Tyr Leu Gln Asp Pro Ser Asn Glu Asp  
 180 185 190  
 Glu Arg Tyr Leu Arg Ala Arg Met Arg Lys Lys Leu Phe Pro Trp Leu  
 195 200 205  
 Glu Glu Val Phe Gly Lys Asn Ile Thr Phe Pro Leu Leu Thr Leu Gly  
 210 215 220  
 Glu Glu Ser Ala Glu Leu Ser Glu Tyr Leu Glu Lys Gln Ala Gln Pro  
 225 230 235 240  
 Phe Phe Ser Ala Ala Thr His Gln Asp Ser Gln Gly Glu Leu Pro Cys  
 245 250 255  
 Pro Asp Cys Leu Ile Gln Gln Ala Phe Leu Cys Lys Trp Val Met Lys  
 260 265 270  
 Lys Phe Phe Asn Asn Ala Gly Ile Ala Val Ser Arg His Phe Leu Gln  
 275 280 285  
 Met Val Tyr Asp His Leu Ser Arg Ser Ser Cys Ala Thr Leu Arg Met  
 290 295 300  
 Arg Asn Lys Ile Val Ile Ile Lys Pro Gly Val Val Val Ile Asp  
 305 310 315

&lt;210&gt;1072

&lt;211&gt;918

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1072

Leu Ile Ser Leu Val Val Lys Phe Met Ser Lys Asp Lys Lys Met Lys  
 1 5 10 15  
 Pro Glu Pro Lys Lys Asn Phe Pro Thr Val Phe Phe Phe Leu Leu Phe  
 20 25 30  
 Gly Val Val Phe Gly Val Val Ala Phe Gln Asn Phe Leu Ala Gly Lys  
 35 40 45  
 Lys Ala Arg Val Gly Phe Ser His Gln Ile Glu His Leu Val Asn Leu  
 50 55 60  
 Arg Leu Ile Val Pro Glu Asp Ser His Lys Ile Ala Leu Asn Asp Asn  
 65 70 75 80  
 Leu Val Ser Phe Gly Gly Arg Phe Arg Asp Val Gln Thr Gln Glu Gly  
 85 90 95  
 Gln Leu Arg Tyr His Tyr Leu Glu Leu Ile Asp Gln Gly His Arg Leu  
 100 105 110  
 Asp Leu Asp Leu Gln Glu Thr Ser Lys Ser Leu Thr Thr Leu Gly Lys  
 115 120 125  
 Glu Val Thr Asn Ser Ile Leu Trp Phe Ser Ala Ile Ser Gly Ser Pro  
 130 135 140  
 Ile Pro Glu Gln Gly Tyr Ala Ile Ser Tyr Pro Ser Glu Val Ser Gly  
 145 150 155 160  
 Ser Val Leu Thr Glu Pro Leu Val Val Thr Gly Pro Ala Thr Pro Gln  
 165 170 175



Leu Ile Asn Leu His Ser Leu Gln Glu Arg Tyr Pro Thr Ser Arg  
 180 185 190  
 Ser Pro Glu Ala Leu Arg Thr Tyr Gly Ser Asp Leu Tyr Glu Leu Ile  
 195 200 205  
 Gly Lys Tyr Leu Ser Pro Val Leu Gly Ile Gly Ser Glu Thr Leu Lys  
 210 215 220  
 Arg Glu Leu Lys Asp Leu Tyr Gln Gln Val Glu Val Ser Leu Thr Gln  
 225 230 235 240  
 Glu Thr Asp Thr Glu Ala Ala Tyr Thr Leu Tyr Gly Gln Val Leu Ser  
 245 250 255  
 Thr Leu Asn Arg Ile Ser Ser Ser Leu Val Val Ser Glu Gly Gly Glu  
 260 265 270  
 Arg Phe Ser Gln Leu Arg Ser Val Arg Leu Tyr Arg Glu Glu Trp Asn  
 275 280 285  
 Lys Tyr His Lys Leu Val Glu Ala Arg Asp Leu Asn Gln Ala Gln Leu  
 290 295 300  
 Glu Lys Leu Arg Gly Glu Leu Ser Gln Thr Val Trp Tyr Phe Asn Asn  
 305 310 315 320  
 Gln Glu Leu Ser Ser Arg Ser Leu Glu Lys Gln Asp Pro Glu Val Phe  
 325 330 335  
 Gly His Trp Phe Ala Gly Ala Lys Glu Glu Trp Thr Ala Phe Lys Phe  
 340 345 350  
 Asn His Ser Leu Ser Phe Lys Ala Pro Asp Gln Pro Arg Asn Leu Val  
 355 360 365  
 Leu Glu Lys Thr Phe Lys Ser Gln Glu Pro Ser Pro His Xaa Leu Gly  
 370 375 380  
 Tyr Leu Phe Thr Xaa Leu Pro Ile Ile Leu Val Leu Leu Phe Val Tyr  
 385 390 395 400  
 Leu Val Phe Ser Arg Gln Met Arg Gly Met Ser Gly Ser Ala Met Ser  
 405 410 415  
 Phe Gly Lys Ser Pro Ala Arg Met Leu Leu Lys Gly Gln Asn Lys Val  
 420 425 430  
 Thr Phe Ala Asp Val Ala Gly Ile Glu Glu Ala Lys Glu Glu Leu Ile  
 435 440 445  
 Glu Ile Val Asp Phe Leu Lys Asn Pro Asn Lys Phe Thr Ser Leu Gly  
 450 455 460  
 Gly Arg Ile Pro Lys Gly Val Leu Leu Ile Gly Pro Pro Gly Thr Gly  
 465 470 475 480  
 Lys Thr Leu Ile Ala Lys Ala Val Ser Gly Glu Ala Asp Arg Pro Phe  
 485 490 495  
 Phe Ser Ile Ala Gly Ser Asp Phe Val Glu Met Phe Val Gly Val Gly  
 500 505 510  
 Ala Ser Arg Ile Arg Asp Met Phe Glu Gln Ala Lys Arg Asn Ala Pro  
 515 520 525  
 Cys Ile Ile Phe Ile Asp Glu Ile Asp Ala Val Gly Arg His Arg Gly  
 530 535 540  
 Ala Gly Ile Gly Gly Gly His Asp Glu Arg Glu Gln Thr Leu Asn Gln  
 545 550 555 560  
 Leu Leu Val Glu Met Asp Gly Phe Gly Thr Asn Glu Gly Val Ile Leu  
 565 570 575  
 Met Ala Ala Thr Asn Arg Pro Asp Val Leu Asp Lys Ala Leu Leu Arg  
 580 585 590  
 Pro Gly Arg Phe Asp Arg Arg Val Val Met Asn Leu Pro Asp Ile Lys  
 595 600 605  
 Gly Arg Phe Glu Ile Leu Met Val His Ala Lys Arg Ile Lys Leu Asp  
 610 615 620  
 Pro Thr Val Asp Leu Met Ala Val Ala Arg Ser Thr Pro Gly Ala Ser  
 625 630 635 640  
 Gly Ala Asp Leu Glu Asn Leu Leu Asn Glu Ala Ala Leu Leu Ala Ala  
 645 650 655  
 Arg Lys Asp Arg Thr Ala Val Thr Ala Val Asp Val Ala Glu Ala Arg  
 660 665 670  
 Asp Lys Val Leu Tyr Gly Lys Glu Arg Arg Ser Leu Glu Met Asp Ala  
 675 680 685

Glu Glu Arg Lys Thr Thr Ala Tyr His Glu Ser Gly Asn Ala Val Val  
 690 695 700  
 Gly Leu Cys Val Gln His Gly Asp Pro Val Asp Lys Val Thr Ile Ile  
 705 710 715 720  
 Pro Arg Gly Leu Ser Leu Gly Ala Thr His Phe Leu Pro Glu Lys Asn  
 725 730 735  
 Lys Leu Ser Tyr Trp Lys Lys Glu Leu Tyr Asp Gln Leu Ala Val Leu  
 740 745 750  
 Met Gly Gly Arg Ala Ala Glu Glu Ile Phe Leu Gly Asp Ile Ser Ser  
 755 760 765  
 Gly Ala Gln Gln Asp Ile Ser Gln Ala Thr Lys Leu Val Arg Ser Met  
 770 775 780  
 Val Cys Glu Trp Gly Met Ser Pro Gln Leu Gly Asn Val Thr Tyr Asp  
 785 790 795 800  
 Glu Arg Ser Asp Gly Leu Thr Gly Tyr Gly Gly Tyr His Glu Lys Ser  
 805 810 815  
 Tyr Ser Glu Glu Thr Ala Lys Thr Ile Asp Thr Glu Leu Arg Met Leu  
 820 825 830  
 Leu Asp Ala Ala Tyr Gln Arg Ala Leu Asp Ile Ile Asn Glu His Lys  
 835 840 845  
 Ala Glu Ile Glu Leu Met Thr Gln Met Leu Ile Glu Phe Glu Thr Leu  
 850 855 860  
 Asp Ser Lys Asp Val Lys Glu Ile Met Asp His Thr Trp Asp Pro Glu  
 865 870 875 880  
 Lys Lys Arg Ala Arg Leu Lys Glu Glu Gly Met Leu Phe Lys Lys Ser  
 885 890 895  
 Ser Asp Asp Leu Pro Pro Pro Pro Lys Glu Asp Thr Leu Pro Gly  
 900 905 910  
 Leu Gly Phe Asn Ala Thr  
 915  
 <210>1073  
 <211>568  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1073  
 Ser Ser Cys Tyr Leu Arg Xaa Ser Ala Ala Leu Ala Ile Ser Asp Ile  
 1 5 10 15  
 Pro Gln Ser Asn Ile Val Ala Gly Val Arg Ile Gly Cys Ile Asp Asn  
 20 25 30  
 Gln Trp Val Ile Asn Pro Thr Lys Thr Glu Leu Ala Ser Ser Thr Leu  
 35 40 45  
 Asp Leu Val Leu Ala Gly Thr Glu Asn Ala Ile Leu Met Ile Glu Gly  
 50 55 60  
 His Cys Asp Phe Phe Thr Glu Glu Gln Val Leu Asp Ala Ile Glu Phe  
 65 70 75 80  
 Gly His Lys His Ile Val Thr Ile Cys Lys Arg Leu Gln Leu Trp Gln  
 85 90 95  
 Glu Glu Val Gly Lys Ser Lys Asn Leu Ser Ala Val Tyr Pro Leu Pro  
 100 105 110  
 Ala Glu Val Leu Thr Ala Val Lys Glu Cys Ala Gln Asp Lys Phe Thr  
 115 120 125  
 Glu Leu Phe Asn Ile Lys Asp Lys Lys Val His Ala Ala Thr Ala His  
 130 135 140  
 Glu Ile Glu Glu Asn Ile Leu Glu Lys Leu Gln Arg Glu Asp Asp Asp  
 145 150 155 160  
 Leu Phe Ser Ser Phe Asn Ile Lys Ala Ala Cys Lys Thr Leu Lys Ser  
 165 170 175  
 Asp Thr Met Arg Ala Leu Ile Arg Asp Arg Glu Ile Arg Ala Asp Gly  
 180 185 190  
 Arg Ser Leu Thr Thr Val Arg Pro Ile Thr Ile Glu Thr Ser Tyr Leu  
 195 200 205  
 Pro Arg Thr His Gly Ser Cys Leu Phe Thr Arg Gly Glu Thr Gln Thr  
 210 215 220  
 Leu Ala Val Cys Thr Leu Gly Ser Glu Ala Met Ala Gln Arg Tyr Glu

225 230 235 240  
 Asp Leu Asn Gly Glu Gly Leu Ser Lys Phe Tyr Leu Gln Tyr Phe Phe  
 245 250 255  
 Pro Pro Phe Ser Val Gly Glu Val Gly Arg Ile Gly Ser Pro Gly Arg  
 260 265 270  
 Arg Glu Ile Gly His Gly Lys Leu Ala Glu Lys Ala Leu Ser His Ala  
 275 280 285  
 Leu Pro Asp Ser Ala Thr Phe Pro Tyr Thr Ile Arg Ile Glu Ser Asn  
 290 295 300  
 Ile Thr Glu Ser Asn Gly Ser Ser Ser Met Ala Ser Val Cys Gly Gly  
 305 310 315 320  
 Cys Leu Ala Leu Met Asp Ala Gly Val Pro Ile Ser Ser Pro Ile Ala  
 325 330 335  
 Gly Ile Ala Met Gly Leu Ile Leu Asp Asp Gln Gly Ala Ile Ile Leu  
 340 345 350  
 Ser Asp Ile Ser Gly Leu Glu Asp His Leu Gly Asp Met Asp Phe Lys  
 355 360 365  
 Ile Ala Gly Ser Gly Lys Gly Ile Thr Ala Phe Gln Met Asp Ile Lys  
 370 375 380  
 Val Glu Gly Ile Thr Pro Ala Ile Met Lys Lys Ala Leu Ser Gln Ala  
 385 390 395 400  
 Lys Gln Gly Cys Asn Asp Ile Leu Asn Ile Met Asn Glu Ala Leu Ser  
 405 410 415  
 Ala Pro Lys Ala Asp Leu Ser Gln Tyr Ala Pro Arg Ile Glu Thr Met  
 420 425 430  
 Gln Ile Lys Pro Thr Lys Ile Ala Ser Val Ile Gly Pro Gly Gly Lys  
 435 440 445  
 Gln Ile Arg Gln Ile Ile Glu Glu Thr Gly Val Gln Ile Asp Val Asn  
 450 455 460  
 Asp Leu Gly Val Val Ser Ile Ser Ala Ser Ser Ala Ser Ala Ile Asn  
 465 470 475 480  
 Lys Ala Lys Glu Ile Ile Glu Gly Leu Val Gly Glu Val Glu Val Gly  
 485 490 495  
 Lys Thr Tyr Arg Gly Arg Val Thr Ser Val Val Ala Phe Gly Ala Phe  
 500 505 510  
 Val Glu Val Leu Pro Gly Lys Glu Gly Leu Cys His Ile Ser Glu Cys  
 515 520 525  
 Ser Arg Gln Arg Ile Glu Asn Ile Ser Asp Val Val Lys Glu Gly Asp  
 530 535 540  
 Ile Ile Asp Val Lys Leu Ser Ile Asn Glu Lys Gly Gln Leu Lys  
 545 550 555 560  
 Leu Ser His Lys Ala Thr Leu Glu  
 565

&lt;210&gt;1074

&lt;211&gt;127

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1074

Ser Asp Arg Ser Lys Ile Leu Val Phe Glu Thr Gly Lys Ile Ala Arg  
 1 5 10 15  
 Gln Ala Asn Gly Ala Val Leu Val Arg Ser Gly Glu Thr Cys Val Phe  
 20 25 30  
 Ala Ser Ala Cys Ala Val Asp Leu Asp Asp Lys Val Asp Phe Leu Pro  
 35 40 45  
 Leu Arg Val Asp Tyr Gln Glu Lys Phe Ser Ser Thr Gly Lys Thr Leu  
 50 55 60  
 Gly Gly Phe Ile Lys Arg Glu Gly Arg Pro Ser Glu Lys Glu Ile Leu  
 65 70 75 80  
 Val Ser Arg Leu Ile Asp Arg Ser Leu Arg Pro Ser Phe Pro Tyr Arg  
 85 90 95  
 Leu Met Gln Asp Val Gln Val Leu Ser Tyr Val Trp Ser Tyr Asp Gly  
 100 105 110  
 Gln Val Leu Pro Asp Pro Leu Ala Ile Cys Ala Xaa Leu Leu Leu  
 115 120 125

&lt;210&gt;1075

&lt;211&gt;163

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1075

```

Leu Gly Gly Glu Lys Leu Ile Asn Met Glu Lys Asp Ile Phe Phe Met
 1          5          10          15
Gln Gln Ala Phe Lys Glu Ala Arg Lys Ala Tyr Asp Gln Asp Glu Val
          20          25          30
Pro Val Gly Cys Val Ile Val Lys Asp Asp Lys Ile Ile Ala Arg Ala
          35          40          45
His Asn Ser Val Glu Lys Leu Lys Asp Ala Thr Ala His Ala Glu Ile
          50          55          60
Leu Cys Ile Gly Ser Ala Ala Gln Asp Leu Asp Asn Trp Arg Leu Leu
          65          70          75          80
Asp Thr Val Leu Tyr Cys Thr Leu Glu Pro Cys Leu Met Cys Ala Gly
          85          90          95
Ala Ile Gln Leu Ala Arg Ile Pro Arg Ile Val Trp Ala Ala Pro Asp
          100          105          110
Val Arg Leu Gly Ala Gly Gly Ser Trp Val Asn Ile Phe Thr Glu Glu
          115          120          125
His Pro Phe His Thr Val Ser Cys Thr Gly Gly Val Cys Ser Glu Glu
          130          135          140
Ala Glu His Leu Met Lys Lys Phe Phe Val Glu Lys Arg Arg Glu Lys
          145          150          155          160
Ser Glu Lys

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&lt;210&gt;1076

&lt;211&gt;100

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1076

```

Lys Ser Ala Glu Arg Lys Val Lys Asn Lys Ile Val Thr Leu Leu Asp
 1          5          10          15
Gln Leu Tyr Glu Asp Gln Glu Ser Arg Leu Gln Lys Leu Gly Glu Glu
          20          25          30
Ile Val Pro Asn Leu Thr Pro Glu Asp Leu Leu Gln Pro Met Asp Phe
          35          40          45
Xaa Gln Leu Glu Gly Asn Pro Ala Phe Arg Phe Glu Glu Gly Val Leu
          50          55          60
Ser Gly Ile Gly Glu Val Arg Ala Ala Ile Phe Asn Gly Ala Leu Ser
          65          70          75          80
Arg Glu Leu Glu Ser Gln Arg Ser Ser Ile Gly Val Gly Asp Leu Phe
          85          90          95
Phe Phe Thr Lys
          100

```

&lt;210&gt;1077

&lt;211&gt;120

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1077

```

His Leu Ser Ile Glu Glu Leu Met Ser Ile Gln Pro Val Ser Asn Thr
 1          5          10          15
Thr Thr Lys Ala Asp Lys Val Ile Pro Asp Ser Thr Lys Val Ile Ser
          20          25          30
Asp Ser Ile Thr Ile Asn Lys Gln Ser Ala Phe Tyr Phe Cys Ile Ser
          35          40          45
Val Met Leu Arg Leu Ser Glu Ser Thr Thr Glu Tyr Gly Lys Ser Ile
          50          55          60
Leu Ala Val Leu Glu Asp Asn Thr Ile Val Gln Gln Gln Arg Val Lys
          65          70          75          80
Glu Leu Ile Asn Leu Pro Leu Leu Lys Val Pro Asp Leu Gln Lys Lys
          85          90          95
Asp Gly Ser Asp Asp Glu Tyr Lys Asn Gln Asn Glu Ile Gln Ala Tyr

```

100  
 Gln Ser Ser Asn Gln Gln Ile Ser Ala Asn Arg Gln Met Ile Gln Gln  
 115  
 Glu Leu Ser Ser Ala Gln Gln Arg Ala Gln Ala Asn Gln Lys Ser Val  
 130  
 Asn Ser Thr Thr Ile Glu Ser Met Gln Ile Leu Gln Ala Thr Ser Ser  
 145  
 Met Leu Ser Thr Leu Lys Glu Leu Thr Ile Lys Ala Asn Leu Thr Asn  
 165  
 Ser Pro Ser Asp  
 180

&lt;210&gt;1078

&lt;211&gt;181

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1078

Asn Arg Lys Pro Val Arg Leu Asn Met Trp Ile Ile Asp Pro Leu Ser  
 1 5 10 15  
 Ala Lys Xaa Pro Leu Gln Ala Ala Ile Asn Val Pro Gly Thr Pro Ile  
 20 25 30  
 Thr Gly Gly Pro Asn Thr Ala Thr Ala Asp Asp Ile Ile Ala Lys Phe  
 35 40 45  
 Ser Lys Asp Ser Asn Pro Leu Ile Val Thr Val Tyr Tyr Val Tyr Gln  
 50 55 60  
 Ser Val Leu Val Ala Gln Asp Asn Leu Ser Ile Ile Ala Gln Glu Leu  
 65 70 75 80  
 Gln Ala Asn Ser Ser Ala Gln Thr Tyr Leu Asn Asn Gln Glu Ala Leu  
 85 90 95  
 Tyr Gln Tyr Val Ser Ile Pro Lys Asn Lys Leu Asn Asp Asn Ser Ser  
 100 105 110  
 Ser Tyr Leu Gln Asn Ile Gln Ser Asp Asn Gln Ala Ile Gly Ala Ser  
 115 120 125  
 Arg Gln Ala Ile Gln Asn Gln Ile Ser Ser Leu Gly Asn Ala Ala Gln  
 130 135 140  
 Val Ile Ser Ser Asn Leu Asn Thr Asn Asn Asn Ile Ile Gln Gln Ser  
 145 150 155 160  
 Leu Gln Val Gly Gln Ala Leu Ile Gln Thr Phe Ser Gln Ile Val Ser  
 165 170 175  
 Leu Ile Ala Asn Ile  
 180

&lt;210&gt;1079

&lt;211&gt;168

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1079

Thr Lys Val Asn Phe Phe Ile Met Ser Ile Thr Thr Leu Gly Thr Leu  
 1 5 10 15  
 Pro Thr Val Asn Thr Ile Asn Ser Ser Arg Pro Pro Leu Glu Pro Leu  
 20 25 30  
 Asn Thr Pro Lys Ile Gly Ala Val Leu Phe Ser Ile Tyr Glu Leu Leu  
 35 40 45  
 Leu Gln Ala Ile Glu Ile Arg Gln Gln Thr Val Leu Thr Gln Ser Gln  
 50 55 60  
 Gln Leu Asn Asp Asn Thr Asn Ile Gln Gln Gln Leu Asn Gln Glu Thr  
 65 70 75 80  
 Asn Gln Ile Lys Tyr Ala Ile Val Ser Ala Gly Ala Lys Glu Asp Glu  
 85 90 95  
 Ile Thr Arg Val Gln Asn Gln Asn Gln Asn Tyr Ser Ala Gln Arg Ser  
 100 105 110  
 Asn Ile Gln Asp Glu Leu Val Thr Thr Arg Gln Asn Gly Gln Ile Ile  
 115 120 125  
 Leu Ser His Ala Ser Thr Asn Ile Asn Ile Ile Gln Gln Gln Ser Ser  
 130 135 140  
 Gln Asp Ser Ser Phe Ile Lys Thr Thr Asn Ser Ile Gly Ser Thr Val

145 150 155 160  
 Asn Gln Leu Asn Lys Pro Leu Gly  
 165  
 <210>1080  
 <211>440  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1080  
 Val Leu Asn Tyr Ser Phe Ile Gly Met Leu Lys Pro Met Tyr Val Leu  
 1 5 10 15  
 Ser Lys Arg Leu Tyr Arg Trp Val Asn Gln Leu Ile Lys Leu Gly Asp  
 20 25 30  
 Leu Val Lys Asn Ser Arg Ser Phe Ser Val Glu Trp Val Phe Ile Ser  
 35 40 45  
 Ala Leu Leu Leu Ile Phe Gly Cys Leu Gly Cys Ala Ser Val Val Lys  
 50 55 60  
 Val Ser Leu Val Pro Phe Leu Leu Leu Phe Ser Phe Leu Ala Phe Pro  
 65 70 75 80  
 Leu Ile Leu Cys Phe Arg Gly Lys Gly Tyr Ala Leu Leu Leu Gly Val  
 85 90 95  
 Phe Val Thr Leu Tyr Val Ala Lys Tyr Val Val Gly Glu Thr Leu Tyr  
 100 105 110  
 Val Ser Phe Trp Leu Ser Gly Leu Gly Val Ser Phe Leu Leu Ala Phe  
 115 120 125  
 Gly Leu Phe Leu Gln Gly Val Trp Leu Ala Gln Glu Glu Met Val  
 130 135 140  
 Lys Gly Lys Glu Gln Leu Arg Leu Ser Glu Asp Leu Asp Ala Gln Arg  
 145 150 155 160  
 Ser Ala Tyr Glu Asp Leu Leu Leu Thr Lys Ser Gln Glu Lys Glu Phe  
 165 170 175  
 Leu Asp Ala Arg Ala Gln Gly Leu Asp Arg Glu Leu Thr Glu Cys Gln  
 180 185 190  
 Glu Leu Leu Lys Ala Ala Tyr Gln Lys Gln Glu Tyr Leu Thr Ile Asp  
 195 200 205  
 Leu Lys Ile Leu Ala Asp Gln Lys Asn Ser Trp Leu Glu Asp Tyr Ala  
 210 215 220  
 Glu Leu His Asn Lys Tyr Ile Glu Leu Val Ser Lys Asn Gly Asp Val  
 225 230 235 240  
 Val Phe Pro Trp Val Ala Glu Pro Ser Val Gly Glu Ser Gln Gly Ser  
 245 250 255  
 Glu Arg Val Asp Val Ser Arg Trp Val Ser Ala Leu Gln Glu Lys Glu  
 260 265 270  
 Glu Ser Leu Glu Arg Leu Arg Asn Glu Ile Leu Val Glu Lys Gln Arg  
 275 280 285  
 Cys Ser Asp Tyr Glu His Arg Cys Gln Glu Leu Gly Leu Leu Leu Gln  
 290 295 300  
 Asn Phe Thr Ala Leu Glu Arg Arg Cys Glu Glu Leu Gln Asn Leu Leu  
 305 310 315 320  
 Asn Gln Lys Glu Thr Gln Ile Asn Glu Leu His Gln Leu Val Cys Lys  
 325 330 335  
 Ser Glu Glu Lys Val Ser Val Glu Pro Ser Ala His Ala Glu Thr Ser  
 340 345 350  
 Cys Val Glu Glu Lys Gln Tyr Lys Gly Leu Tyr Ser Gln Leu Gln Glu  
 355 360 365  
 Gln Phe Leu Glu Lys Ser Glu Thr Leu Ser Leu Val Arg Lys Lys Leu  
 370 375 380  
 Phe Ala Val Gln Glu Lys Tyr Leu Thr Leu Lys Lys Lys Glu Glu Leu  
 385 390 395 400  
 Thr Lys Gln Asp Ile Ser Phe Asp Asp Ile Ser Met Ile Gln Gly Leu  
 405 410 415  
 Leu Glu Arg Ile Glu Ile Leu Glu Glu Glu Val Ser His Leu Glu Glu  
 420 425 430  
 Leu Val Ser Arg Ser Leu Ser Leu  
 435 440

&lt;210&gt;1081

&lt;211&gt;294

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1081

Val Ile Leu Met Lys Arg Asn Asp Pro Cys Trp Cys Gly Ser Gly Arg  
 1 5 10 35  
 Lys Trp Lys Gln Cys His Tyr Pro Gln Pro Pro Lys Met Ser Pro Glu  
 20 25 30  
 Ala Leu Lys Gln His Tyr Ala Ser Gln Tyr Asn Ile Leu Lys Thr  
 35 40 45  
 Pro Glu Gln Lys Ala Lys Ile Tyr Asn Ala Cys Gln Ile Thr Ala Arg  
 50 55 60  
 Ile Leu Asp Glu Leu Cys Lys Ala Ser Gln Lys Gly Val Thr Thr Asn  
 65 70 75 80  
 Glu Leu Asp Glu Leu Ser Gln Glu Leu His Lys Lys Tyr Asp Ala Ile  
 85 90 95  
 Ala Ala Pro Phe His Tyr Gly Ser Pro Pro Phe Pro Lys Thr Ile Cys  
 100 105 110  
 Thr Ser Leu Asn Glu Val Ile Cys His Gly Ile Pro Asn Asp Ile Pro  
 115 120 125  
 Leu Lys Asp Gly Asp Ile Met Asn Ile Asp Val Ser Cys Ile Val Asp  
 130 135 140  
 Gly Tyr Tyr Gly Asp Cys Ser Arg Met Val Met Ile Gly Glu Val Pro  
 145 150 155 160  
 Glu Ile Lys Lys Lys Ile Cys Gln Ala Ala Leu Glu Cys Leu Asn Asp  
 165 170 175  
 Ser Ile Ala Ile Leu Lys Pro Gly Ile Pro Leu Cys Glu Ile Gly Glu  
 180 185 190  
 Ala Ile Glu Ala Arg Ala Asp Thr Tyr Gly Phe Ser Val Val Asp Gln  
 195 200 205  
 Phe Val Gly His Gly Val Gly Ile Glu Phe His Glu Asn Pro Tyr Val  
 210 215 220  
 Pro His Tyr Arg Asn Arg Ser Met Ile Pro Leu Ala Pro Gly Met Ile  
 225 230 235 240  
 Phe Thr Ile Glu Pro Met Ile Asn Val Gly Lys Lys Glu Gly Val Val  
 245 250 255  
 Asp Pro Lys Asn Gln Trp Glu Ala Arg Thr Cys Asp Asn Gln Pro Ser  
 260 265 270  
 Ala Gln Trp Glu His Thr Ile Ala Ile Thr Glu Thr Gly Tyr Glu Ile  
 275 280 285  
 Leu Thr Leu Leu Asn Asp  
 290

&lt;210&gt;1082

&lt;211&gt;202

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1082

Met Leu Ile Leu Leu Asn Leu Ser Leu Leu Phe Tyr Val Leu Phe Asp  
 1 5 10 15  
 Ser Pro Gly Ser Ile Pro Val Phe Val Ala Leu Leu Lys Asn Phe Ser  
 20 25 30  
 Arg Lys Lys Gln Gln Arg Val Ile Leu Arg Glu Cys Leu Phe Ala Leu  
 35 40 45  
 Gly Ala Leu Ile Leu Phe Val Thr Phe Gly Arg Ser Phe Phe Gln Phe  
 50 55 60  
 Leu Asp Ile Ser Leu Tyr Ala Phe Gln Ile Ile Gly Gly Phe Leu Leu  
 65 70 75 80  
 Phe Thr Val Ser Ile Lys Met Met Leu Ala Pro Met Pro Glu Lys Ala  
 85 90 95  
 Lys Asp Asp Thr Ser Lys Thr Glu Pro Ile Phe Phe Pro Leu Ala Phe  
 100 105 110  
 Pro Val Ile Thr Gly Pro Ala Val Ile Thr Ala Leu Leu Ser Tyr Met  
 115 120 125

Glu Glu Gly Ile Tyr Ser Arg Glu Ile Ile Phe Thr Ala Met Ile Ile  
 130 135 140  
 Ala Trp Ala Phe Ser Leu Phe Thr Leu Leu Cys Ser Ser Phe Phe Asp  
 145 150 155 160  
 Arg Leu Ser Gly Asn Phe Gly Leu Leu Ala Leu Glu Arg Leu Phe Gly  
 165 170 175  
 Ile Ala Leu Leu Leu Met Ser Val Asn Leu Met Leu Lys Gly Ile Ser  
 180 185 190  
 Ile Ala Phe Asn Ile Gly Phe Tyr Ile Gly  
 195 200

&lt;210&gt;1083

&lt;211&gt;251

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1083

Thr Ser Arg Tyr Gly Pro Leu Pro Cys Ser Arg His His Glu Asp Leu  
 1 5 10 15  
 His Lys Arg His Ala Asn Thr Asn Arg Glu Ile Asp Arg Gln Phe  
 20 25 30  
 Pro Ala Arg Phe Leu Tyr Arg Ser Gln Asp Pro Ile Tyr Lys Phe Glu  
 35 40 45  
 Asp Leu Asn Gly Lys Val Leu Gly Phe Cys Leu Asn Asn Ser Arg Asp  
 50 55 60  
 Leu Asn Arg Leu Leu Glu Thr Leu Asn Arg Asn Gly Val Val Pro Ser  
 65 70 75 80  
 Glu Val Lys Asn Val Ser Ser Asp Leu Ile Ser Pro Met Leu Leu Asn  
 85 90 95  
 Lys Ile Asp Phe Leu Tyr Gly Ala Phe Tyr Asn Ile Glu Gly Val Lys  
 100 105 110  
 Leu Gln Thr Leu Gly Met Pro Val Lys Cys Phe Leu Ser Asp Thr Cys  
 115 120 125  
 Asp Leu Pro Thr Gly Pro Gln Leu Ile Val Phe Thr Lys Lys Gly Thr  
 130 135 140  
 Lys Ala Ser Glu Pro Glu Ile Val Glu Ala Phe Gln Lys Ala Leu Gln  
 145 150 155 160  
 Glu Ser Ile Ile Phe Ser Lys Asp His Pro Glu Asp Ala Phe Lys Leu  
 165 170 175  
 Tyr Ala Lys Glu Thr Lys Ser Ile Pro Lys Asn Leu Tyr Gln Glu Tyr  
 180 185 190  
 Leu Gln Trp Glu Glu Thr Phe Pro Leu Leu Ala Gln Ser Gln Asp Pro  
 195 200 205  
 Leu Ser Lys Asp Leu Val Asp Lys Leu Leu Glu Thr Ile Ile Lys Arg  
 210 215 220  
 Tyr Pro Glu Leu Ala Ser Glu Val Ala Lys Phe Ser Leu Asn Asp Leu  
 225 230 235 240  
 Tyr Asn Pro Ser Leu Pro Glu Glu Gln Ser Val  
 245 250

&lt;210&gt;1084

&lt;211&gt;303

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1084

Arg Ser Pro Thr Thr Ser Phe His Pro Ala Thr Val His Ser Tyr Val  
 1 5 10 15  
 Cys Ser Gly Ser Thr Asp Cys Thr Leu Val Trp Leu Gly Asn Arg Cys  
 20 25 30  
 Cys Asn Arg Pro Tyr Ser Thr His His Ile Leu Ser Ala His Pro Asp  
 35 40 45  
 Tyr Leu Ser Gly His Leu Ile Asn Thr Arg Arg Thr Tyr Arg Ala Ile  
 50 55 60  
 Arg Pro Leu Arg Ser Thr Lys Phe Gln Leu Leu Ile Lys Leu Arg Ile  
 65 70 75 80  
 Pro His Ala Leu Pro His Ile Phe Ser Gly Leu Lys Ile Ala Ile Gly  
 85 90 95



Ser Ala Gly Phe Ala Ala Ile Ala Gly Glu Trp Val Ala Gln Ser  
 100 105 110  
 Gly Leu Gly Ile Leu Met Leu Glu Ser Arg Arg Asn Tyr Glu Met Glu  
 115 120 125  
 Leu Ala Phe Ala Gly Leu Ala Thr Leu Ser Ile Leu Thr Leu Ser Leu  
 130 135 140  
 Phe Gln Ile Thr Leu Leu Ile Glu Lys Leu Ile Phe Ser Leu Phe Arg  
 145 150 155 160  
 Val Lys Arg Met Ser Leu Lys His Lys Ser Val Ala Lys Lys Ala Leu  
 165 170 175  
 Ser Val Leu Ala Leu Ile Pro Ile Met Leu Ile Pro Trp Lys Gly Asn  
 180 185 190  
 Ser Lys Ser Pro Pro Asp Lys Lys Asn Leu Thr Ser Leu Thr Leu Leu  
 195 200 205  
 Leu Asp Trp Thr Pro Asn Pro Asn His Ile Pro Leu Tyr Ala Gly Val  
 210 215 220  
 Ala Lys Gly Tyr Phe Lys Gln His Gly Leu Asp Leu Gln Leu Gln Lys  
 225 230 235 240  
 Asn Thr Asp Ser Ser Ser Ala Val Pro His Val Leu Phe Glu Gln Val  
 245 250 255  
 Asp Met Ala Leu Tyr His Ala Leu Gly Ile Met Lys Thr Ser Ile Lys  
 260 265 270  
 Gly Met Pro Ile Gln Ile Val Gly Arg Leu Ile Asp Ser Ser Leu Gln  
 275 280 285  
 Asp Phe Ser Thr Glu Val Arg Thr Pro Ser Thr Asn Leu Lys Thr  
 290 295 300  
 <210>1085  
 <211>460  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1085  
 Met Arg Gln Glu Lys Asp Ser Leu Gly Ile Val Glu Val Pro Glu Asp  
 1 5 10 15  
 Lys Leu Tyr Gly Ala Gln Thr Met Arg Ser Arg Asn Phe Phe Ser Trp  
 20 25 30  
 Gly Pro Glu Leu Met Pro Tyr Glu Val Ile Arg Ala Leu Val Trp Ile  
 35 40 45  
 Lys Lys Cys Ala Ala Gln Ala Asn Gln Asp Leu Gly Phe Leu Asp Ser  
 50 55 60  
 Lys His Cys Asp Met Ile Val Ala Ala Ala Asp Glu Ile Leu Glu Gly  
 65 70 75 80  
 Gly Phe Glu Glu His Phe Pro Leu Lys Val Trp Gln Thr Gly Ser Gly  
 85 90 95  
 Thr Gln Ser Asn Met Asn Val Asn Glu Val Ile Ala Asn Leu Ala Ile  
 100 105 110  
 Arg His His Gly Gly Val Leu Gly Ser Lys Asp Pro Ile His Pro Asn  
 115 120 125  
 Asp His Val Asn Lys Ser Gln Ser Ser Asn Asp Val Phe Pro Thr Ala  
 130 135 140  
 Met His Ile Ala Ala Val Ile Ser Leu Lys Asn Lys Leu Ile Pro Ala  
 145 150 155 160  
 Leu Asp His Met Ile Arg Val Leu Asp Ala Lys Val Glu Glu Phe Arg  
 165 170 175  
 His Asp Val Lys Ile Gly Arg Thr His Leu Met Asp Ala Val Pro Met  
 180 185 190  
 Thr Leu Gly Gln Glu Phe Ser Gly Tyr Ser Ser Gln Leu Arg His Cys  
 195 200 205  
 Leu Glu Ser Ile Ala Phe Ser Leu Ala His Leu Tyr Glu Leu Ala Ile  
 210 215 220  
 Gly Ala Thr Ala Val Gly Thr Gly Leu Asn Val Pro Glu Gly Phe Val  
 225 230 235 240  
 Glu Lys Ile Ile His Tyr Leu Arg Lys Xaa Thr Asp Glu Pro Phe Ile  
 245 250 255  
 Pro Ala Xaa Asn Tyr Phe Ser Ala Leu Ser Cys His Asp Ala Leu Val

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<211>20
<212>DNA
<400>1396
gaccttgcca gcttgggtcg      20
<210>1397
<211>20
<212>DNA
<400>1397
gctgctaaat cccatcgctt      20
<210>1398
<211>20
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<400>1398
gttttgtggc tttggcagtg      20
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<211>20
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actttcctaa gaagcgtagc      20
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<400>1400
gaggaatggc gcaggagtta      20
<210>1401
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<212>DNA
<400>1401
gcagtgaaaa cgggaatccag      20
<210>1402
<211>20
<212>DNA
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gcgtggggat tgtaggata      20
<210>1403
<211>20
<212>DNA
<400>1403
ggccggggat caatcagcta      20
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<212>DNA
<400>1404
gaataagatg caggcggaaag      20
<210>1405
<211>20
<212>DNA
<400>1405
gggagacggt tgtgcgtaaa      20
<210>1406
<211>20
<212>DNA
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cgctcctgcag gtgttattgt      20
<210>1407
<211>20
<212>DNA
<400>1407
caaggsgtgt agagaaagga      20
<210>1408
<211>20
<212>DNA
<400>1408
gaagacaaac cttgtcctgg      20

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Thr Val Met Thr Thr Ile Thr Ala Ala Val Gln Val Gly Met Met Leu  
 275 280 285  
 Ala Ala Phe Leu Phe Met Lys Gln Met Ser Asp Leu Ser Asp Val Ile  
 290 295 300  
 Ser Thr Ala Lys Tyr Phe Asp Lys Asp Ser Asp Phe Leu Ser Lys Ala  
 305 310 315 320  
 Glu Val Pro Gln Asn Thr Glu Ile Tyr Glu Ile Asn Gly Pro Phe Phe  
 325 330 335  
 Phe Gly Ile Ala Asp Arg Leu Lys Asn Leu Leu Asn Asp Ile Glu Lys  
 340 345 350  
 Pro Pro Lys Ile Phe Ile Leu Cys Met Thr Arg Val Pro Thr Ile Asp  
 355 360 365  
 Ala Ser Ala Met His Ala Leu Glu Glu Phe Phe Leu Glu Cys Asp Arg  
 370 375 380  
 Gln Gly Thr Leu Leu Leu Leu Ala Gly Val Lys Lys Thr Pro Leu Ala  
 385 390 395 400  
 Asp Leu Lys Arg Tyr His Leu Asp Glu Leu Ile Gly Val Asp His Ile  
 405 410 415  
 Phe Ser Asn Ile Lys Ser Ala Leu Leu Phe Ala Gln Ala Leu Thr Asn  
 420 425 430  
 Leu Glu Ser Lys Thr Ser Thr Arg His Leu Val  
 435 440

&lt;210&gt;1087

&lt;211&gt;143

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1087

Lys Asn Phe Ile Pro Lys Leu Tyr Thr Ser Ile Lys Glu Gly Tyr Ser  
 1 5 10 15  
 Phe Asn Thr Phe Lys Lys Asp Phe Gln Ala Gly Ile Thr Val Gly Ile  
 20 25 30  
 Leu Ala Phe Pro Phe Ala Ile Ala Ile Ala Ile Gly Val Gly Val Ser  
 35 40 45  
 Pro Ile Gln Gly Leu Leu Ala Ser Ile Ile Gly Gly Leu Leu Ala Ser  
 50 55 60  
 Ala Met Gly Gly Ser Asn Val Leu Ile Ser Gly Pro Ser Ser Ala Phe  
 65 70 75 80  
 Ile Ser Ile Leu Tyr Cys Leu Ser Ala Lys Tyr Gly Ala Glu Ala Leu  
 85 90 95  
 Phe Thr Val Thr Leu Leu Ala Gly Val Phe Leu Ile Ala Phe Gly Leu  
 100 105 110  
 Thr Gly Leu Gly Thr Phe Ile Lys Tyr Met Pro Tyr Pro Val Val Thr  
 115 120 125  
 Gly Leu Thr His Arg Thr Cys Asp His Tyr Ile Leu Leu Ala Asn  
 130 135 140

&lt;210&gt;1088

&lt;211&gt;422

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1088

Val Thr Met Leu Lys Leu Gln Leu Cys Ala Leu Phe Leu Phe Gly Tyr  
 1 5 10 15  
 Leu Ala Ile Val Phe Glu His Ile Val Arg Val Asn Lys Ser Ala Ile  
 20 25 30  
 Ala Leu Ala Met Gly Gly Leu Met Trp Leu Val Cys Phe Ser His Ile  
 35 40 45  
 Pro Met Ala Asp His Met Ile Leu Val Glu Glu Ile Ala Asp Met Ser  
 50 55 60  
 Gln Val Ile Phe Phe Leu Phe Ser Ala Met Ala Ile Val Glu Leu Ile  
 65 70 75 80  
 Asp Ala His Lys Gly Phe Ser Val Ile Val Lys Phe Cys Arg Ile Gln  
 85 90 95  
 Ser Arg Thr Leu Leu Leu Trp Ala Leu Ile Gly Leu Ser Phe Phe Leu  
 100 105 110

Ser Ala Ala Leu Asp Asn Leu Thr Ser Ile Ile Ile Ile Ile Ser Ile  
 115 120 125  
 Leu Lys Arg Leu Val Lys Ala Arg Glu Asp Arg Leu Leu Gly Ala  
 130 135 140  
 Ile Cys Val Ile Ala Val Asn Ala Gly Gly Ala Trp Thr Pro Leu Gly  
 145 150 155 160  
 Asp Val Thr Thr Thr Met Leu Trp Ile Asn Asn Lys Ile Thr Ser Trp  
 165 170 175  
 Gly Ile Ile Arg Ala Leu Phe Val Pro Ser Leu Val Cys Val Leu Val  
 180 185 190  
 Ala Gly Phe Cys Gly Gln Phe Phe Leu Arg Lys Arg Gly Ser Thr Leu  
 195 200 205  
 Ile Ala Lys Asp Val Glu Leu Gln Ser Ala Pro Pro Lys Ser Leu Trp  
 210 215 220  
 Ile Ile Phe Ile Gly Leu Gly Ser Leu Leu Met Val Pro Val Trp Lys  
 225 230 235 240  
 Ala Cys Leu Gly Leu Pro Pro Phe Met Gly Ala Leu Leu Gly Leu Gly  
 245 250 255  
 Leu Val Trp Leu Thr Ser Asp Trp Ile His Ser Pro His Gly Glu Asp  
 260 265 270  
 Arg Tyr His Leu Arg Val Pro His Ile Leu Thr Lys Ile Asp Ile Ser  
 275 280 285  
 Ser Ile Thr Phe Phe Ile Gly Ile Leu Leu Ala Val Asn Ala Leu Ser  
 290 295 300  
 Phe Ala Asn Leu Leu Thr Asp Phe Ser Leu Trp Met Asp Lys Ile Phe  
 305 310 315 320  
 Ser Arg Asn Val Val Ala Ile Val Ile Gly Leu Leu Ser Ser Val Leu  
 325 330 335  
 Asp Asn Val Pro Leu Val Ala Xaa Thr Met Gly Met Tyr Thr Leu Pro  
 340 345 350  
 Leu Asp Asp Thr Leu Trp Lys Leu Ile Ala Tyr Ala Ala Xaa Thr Gly  
 355 360 365  
 Gly Ser Ile Leu Ile Ile Gly Ser Ala Ala Gly Val Ala Phe Met Gly  
 370 375 380  
 Leu Glu Lys Val Asp Phe Leu Trp Tyr Phe Lys Arg Ile Ser Trp Ile  
 385 390 395 400  
 Ala Leu Ala Ser Tyr Phe Gly Gly Leu Phe Ser Tyr Phe Val Leu Glu  
 405 410 415  
 Ser Leu Asn Phe Phe Ile  
 420

&lt;210&gt;1089

&lt;211&gt;624

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1089

Lys Arg Glu Val Phe Met Lys Lys Gly Lys Leu Gly Ala Ile Val Phe  
 1 5 10 15  
 Gly Leu Leu Phe Thr Ser Ser Val Ala Gly Phe Ser Lys Asp Leu Thr  
 20 25 30  
 Lys Asp Asn Ala Tyr Gln Asp Leu Asn Val Ile Glu His Leu Ile Ser  
 35 40 45  
 Leu Lys Tyr Ala Pro Leu Pro Trp Lys Glu Leu Leu Phe Gly Trp Asp  
 50 55 60  
 Leu Ser Gln Gln Thr Gln Gln Ala Arg Leu Gln Leu Val Leu Glu Glu  
 65 70 75 80  
 Lys Pro Thr Thr Asn Tyr Cys Gln Lys Val Leu Ser Asn Tyr Val Arg  
 85 90 95  
 Ser Leu Asn Asp Tyr His Ala Gly Ile Thr Phe Tyr Arg Thr Glu Ser  
 100 105 110  
 Ala Tyr Ile Pro Tyr Val Leu Lys Leu Ser Glu Asp Gly His Val Phe  
 115 120 125  
 Val Val Asp Val Gln Thr Ser Gln Gly Asp Ile Tyr Leu Gly Asp Glu  
 130 135 140  
 Ile Leu Glu Val Asp Gly Met Gly Ile Arg Glu Ala Ile Glu Ser Leu

145 150 155 160  
 Arg Phe Gly Arg Gly Ser Ala Thr Asp Tyr Ser Ala Ala Val Arg Ser  
 165 170 175  
 Leu Thr Ser Arg Ser Ala Ala Phe Gly Asp Ala Val Pro Ser Gly Ile  
 180 185 190  
 Ala Met Leu Lys Leu Arg Arg Pro Ser Gly Leu Ile Arg Ser Thr Pro  
 195 200 205  
 Val Arg Trp Arg Tyr Thr Pro Glu His Ile Gly Asp Phe Ser Leu Val  
 210 215 220  
 Ala Pro Leu Ile Pro Glu His Lys Pro Gln Leu Pro Thr Gln Ser Cys  
 225 230 235 240  
 Val Leu Phe Arg Ser Gly Val Asn Ser Gln Ser Ser Ser Ser Ser Ser Leu  
 245 250 255  
 Phe Ser Ser Tyr Met Val Pro Tyr Phe Trp Glu Glu Leu Arg Val Gln  
 260 265 270  
 Asn Lys Gln Arg Phe Asp Ser Asn His His Ile Gly Ser Arg Asn Gly  
 275 280 285  
 Phe Leu Pro Thr Phe Gly Pro Ile Leu Trp Glu Gln Asp Lys Gly Pro  
 290 295 300  
 Tyr Arg Ser Tyr Ile Phe Lys Ala Lys Asp Ser Gln Gly Asn Pro His  
 305 310 315 320  
 Arg Ile Gly Phe Leu Arg Ile Ser Ser Tyr Val Trp Thr Asp Leu Glu  
 325 330 335  
 Gly Leu Glu Glu Asp His Lys Asp Ser Pro Trp Glu Leu Phe Gly Glu  
 340 345 350  
 Ile Ile Asp His Leu Glu Lys Glu Thr Asp Ala Leu Ile Ile Asp Gln  
 355 360 365  
 Thr His Asn Pro Gly Gly Ser Val Phe Tyr Leu Tyr Ser Leu Leu Ser  
 370 375 380  
 Met Leu Thr Asp His Pro Leu Asp Thr Pro Lys His Arg Met Ile Phe  
 385 390 395 400  
 Thr Gln Asp Glu Val Ser Ser Ala Leu His Trp Gln Asp Leu Leu Glu  
 405 410 415  
 Asp Val Phe Thr Asp Glu Gln Ala Val Ala Val Leu Gly Glu Thr Met  
 420 425 430  
 Glu Gly Tyr Cys Met Asp Met His Ala Val Ala Ser Leu Gln Asn Phe  
 435 440 445  
 Ser Gln Ser Val Leu Ser Ser Trp Val Ser Gly Asp Ile Asn Leu Ser  
 450 455 460  
 Lys Pro Met Pro Leu Leu Gly Phe Ala Gln Val Arg Pro His Pro Lys  
 465 470 475 480  
 His Gln Tyr Thr Lys Pro Leu Phe Met Leu Ile Asp Glu Asp Asp Phe  
 485 490 495  
 Ser Cys Gly Asp Leu Ala Pro Ala Ile Leu Lys Asp Asn Gly Arg Ala  
 500 505 510  
 Thr Leu Ile Gly Lys Pro Thr Ala Gly Ala Gly Gly Phe Val Phe Gln  
 515 520 525  
 Val Thr Phe Pro Asn Arg Ser Gly Ile Lys Gly Leu Ser Leu Thr Gly  
 530 535 540  
 Ser Leu Ala Val Arg Lys Asp Gly Glu Phe Ile Glu Asn Leu Gly Val  
 545 550 555 560  
 Ala Pro His Ile Asp Leu Gly Phe Thr Ser Arg Asp Leu Gln Thr Ser  
 565 570 575  
 Arg Phe Thr Asp Tyr Val Glu Ala Val Lys Thr Ile Val Leu Thr Ser  
 580 585 590  
 Leu Ser Glu Asn Ala Lys Lys Ser Glu Glu Gln Thr Ser Pro Gln Glu  
 595 600 605  
 Thr Pro Glu Val Ile Arg Val Ser Tyr Pro Thr Thr Thr Ser Ala Leu  
 610 615 620  
 <210>1090  
 <211>310  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1090

Met Arg Lys Leu Ile Leu Cys Asn Pro Arg Gly Phe Cys Ser Gly Val  
 1 5 10 15  
 Val Arg Ala Ile Gln Val Val Glu Val Ala Leu Glu Lys Trp Gly Ala  
 20 25 30  
 Pro Ile Tyr Val Lys His Glu Ile Val His Asn Arg His Val Val Asn  
 35 40 45  
 Ala Leu Arg Ala Lys Gly Ala Ile Phe Val Glu Glu Leu Val Asp Val  
 50 55 60  
 Pro Glu Gly Glu Arg Val Ile Tyr Ser Ala His Gly Ile Pro Pro Ser  
 65 70 75 80  
 Val Arg Ala Glu Ala Lys Ala Arg Lys Leu Ile Asp Ile Asp Ala Thr  
 85 90 95  
 Cys Gly Leu Val Thr Lys Val His Ser Ala Ala Lys Leu Tyr Ala Ser  
 100 105 110  
 Lys Gly Tyr Lys Ile Ile Leu Ile Gly His Lys Lys His Val Glu Val  
 115 120 125  
 Ile Gly Ile Val Gly Glu Val Pro Glu His Ile Thr Val Val Glu Lys  
 130 135 140  
 Val Ala Asp Val Glu Ala Leu Pro Phe Ser Ser Asp Thr Pro Leu Phe  
 145 150 155 160  
 Tyr Ile Thr Gln Thr Thr Leu Ser Leu Asp Asp Val Gln Glu Ile Ser  
 165 170 175  
 Ser Ala Leu Leu Lys Arg Tyr Pro Ser Ile Ile Thr Leu Pro Ser Ser  
 180 185 190  
 Ser Ile Cys Tyr Ala Thr Thr Asn Arg Gln Lys Ala Leu Arg Ser Val  
 195 200 205  
 Leu Ser Arg Val Asn Tyr Val Tyr Val Val Gly Asp Val Asn Ser Ser  
 210 215 220  
 Asn Ser Asn Arg Leu Arg Glu Val Ala Leu Arg Arg Gly Val Pro Ala  
 225 230 235 240  
 Asp Leu Ile Asn Asn Pro Glu Asp Ile Asp Thr Asn Ile Val Asn His  
 245 250 255  
 Ser Gly Asp Ile Ala Met Thr Ala Gly Ala Ser Thr Pro Glu Asp Val  
 260 265 270  
 Val Gln Ala Cys Ile Arg Lys Leu Ser Ser Leu Ile Pro Gly Leu Gln  
 275 280 285  
 Val Glu Asn Asp Ile Phe Ala Val Glu Asp Val Val Phe Gln Leu Pro  
 290 295 300  
 Lys Glu Leu Arg Cys Ser  
 305 310

&lt;210&gt;1091

&lt;211&gt;245

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1091

Arg Met Ser Tyr Phe Asn Tyr Gln Lys Asn Ser Val Val Leu Arg Ser  
 1 5 10 15  
 Leu Gly Leu Leu Ala Lys Phe Phe Ser Arg Leu Leu Tyr Arg Val Phe  
 20 25 30  
 Phe Ser Phe Arg Gly Gly Ile Tyr Leu Phe Ser Ser Leu Tyr Leu Lys  
 35 40 45  
 Tyr Pro Arg Leu Phe Phe Tyr Asp Leu Gly Lys Tyr Val Tyr Ser Leu  
 50 55 60  
 Arg His Cys Pro Tyr Ala Lys Leu Gly Arg Leu Pro Gly Ala Ser Leu  
 65 70 75 80  
 Leu Lys Glu Gly Asn Val Tyr Gly Glu Thr Pro Trp Ser Val Leu Ala  
 85 90 95  
 Lys Ile Cys Gln Ala Phe Asp Ile Thr Ser Gln Asp Ile Leu Tyr Asp  
 100 105 110  
 Leu Gly Cys Gly Leu Gly Lys Val Cys Phe Trp Phe Ser His Val Val  
 115 120 125  
 Arg Cys Gln Val Ile Gly Ile Asp Asn Gln Pro His Phe Ile Arg Phe  
 130 135 140  
 Ser Ser Asn Met His Arg Lys Leu Ser Ser Gly Phe Ala Leu Phe Asp

145 150 155 160  
 Thr Glu Glu Phe Lys Asn Val Val Leu Ser Gln Ala Ser Tyr Val Tyr  
 165 170 175  
 Phe Tyr Gly Ser Ser Phe Ser Arg Arg Leu Leu Asn Glu Ile Ile Leu  
 180 185 190  
 Lys Leu Ser Glu Met Ala Pro Gly Ser Val Val Ile Ser Ile Ser Phe  
 195 200 205  
 Pro Leu Asp Ser Phe Ser Arg Gly Lys Glu Cys Phe Phe Thr Glu Lys  
 210 215 220  
 Ser Cys Ser Val Arg Phe Pro Trp Gly Lys Thr Ile Ala Tyr Lys Asn  
 225 230 235 240  
 Ile Arg Lys Gly Ser  
 245  
 <210>1092  
 <211>385  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1092  
 Lys Ser Leu Ser Ala Glu Ser Thr Ser Ser Asn Ser Thr Gly Lys Ala  
 1 5 10 15  
 Ser Thr Glu Thr Thr Ser Ser Ser Phe Pro Phe Phe Ser Cys Lys Ala  
 20 25 30  
 Pro Glu Gly Asp Ser Ser Val Asp Lys Thr Phe Thr Val Ser Val Gln  
 35 40 45  
 Thr Pro Lys Ala Gln Glu Gln Glu Ala Ser Ala Ser Gln Ser Gln  
 50 55 60  
 Ala Gln Phe His Val Arg Ser Tyr Ser Ser Ser Thr Ile Lys Glu His  
 65 70 75 80  
 Ser Ala Lys Glu Lys Val Ser Gln Ser Thr Lys Ser Ala Glu Thr Gln  
 85 90 95  
 Lys His Thr Gln Thr Lys Ser Asp Ala Thr Leu Ser Pro Met Ser Leu  
 100 105 110  
 Tyr Ser Thr Leu His Lys Glu Val Pro Gln Ala Leu Ser Ser Thr Lys  
 115 120 125  
 Ser Gln Gln Lys Asp Glu Glu His Arg Asp Gln Arg Gln Gln Glu Gly  
 130 135 140  
 Tyr Glu Gln Glu Gln Glu Gln Glu Gly Lys Lys Lys Thr Pro Trp  
 145 150 155 160  
 Cys Thr Val Glu Ser Leu Gln Gln Thr Ser Ser Ser Asn Gln Val Tyr  
 165 170 175  
 Glu Ser Tyr Thr Pro Ile Ile Pro Asp Pro Ile Val Glu Phe Ala Leu  
 180 185 190  
 Ser Glu Ser Gln Leu Ser Val Leu Ala Gly Lys Arg Val Thr Asn Leu  
 195 200 205  
 Asp Val Leu Arg Ile Cys Thr Glu Leu Met Lys Leu Met Leu Lys Ser  
 210 215 220  
 Arg Ala Asn Asp Thr Met Thr Arg Leu Glu Glu Arg Glu Leu Met Glu  
 225 230 235 240  
 Arg Glu Ala His Glu Leu Ala Ala Ser Tyr Ser Arg Gln Ala Lys Tyr  
 245 250 255  
 Ala Arg Trp Leu Gly Ile Ala Thr Ala Thr Leu Gly Ile Leu Gly Ala  
 260 265 270  
 Ile Ala Pro Met Val Gly Glu Ile Ser Gly Asp Ser Ile Leu Gly Phe  
 275 280 285  
 Val Gln Arg Ile Ser Gly Arg Phe Lys Asp Ala Thr Ala Lys Thr Phe  
 290 295 300  
 Phe Lys Gly Ile Gly Lys Val Phe Thr Ser Leu Ser Gln Leu Thr Glu  
 305 310 315 320  
 Ala Ala Ser Lys Val His Glu Leu Ser Glu Ser Ala Val Arg Ala Val  
 325 330 335  
 Ala Glu Tyr Arg Lys Glu Val Phe Arg Met Arg Gln Asp Glu Val Thr  
 340 345 350  
 Arg Thr Ile Glu Glu Val Lys Asp Asn Trp Lys Ser Met Asp Asn Phe  
 355 360 365

Leu Leu Asn Ile Leu Gln Thr Glu His Asp Ala Ala Arg Ser Leu Tyr  
 370 375 380

Gln

385

&lt;210&gt;1093

&lt;211&gt;412

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1093

Ile His Arg Arg Xaa Ile Met Thr Val Ser Tyr Gln Ser Ile Ser Thr  
 1 5 10 15  
 Pro Pro Pro Glu Gly Glu Phe Asp Ile Phe Val Asp Gly Asn Ala Thr  
 20 25 30  
 Glu Glu Ala Val Val Ala Ala Glu Val Gln Val Ala Leu Pro Ala Gly  
 35 40 45  
 Glu Gln Tyr Ala Met Leu Arg Ala Thr Ser Glu Leu Cys Phe Gly Ile  
 50 55 60  
 Xaa Thr Gln Ser Glu Cys Ala Leu Thr Gln Ala Leu Pro Pro Lys Glu  
 65 70 75 80  
 Lys Thr Ile Thr Arg Arg Ala Ile Ser Ser Lys Lys Trp His Ile Asn  
 85 90 95  
 Ala Ile Asn Ile Ser Ala Glu Pro Lys Thr Arg Thr Ile Ala Ala Asp  
 100 105 110

&lt;210&gt;1094

&lt;211&gt;515

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1094

Cys Gly Asn Ser Thr Met Ser Ser Trp Leu Ser Gln Ala Ser Glu Val  
 1 5 10 15  
 Leu Leu Asn Gln Asp Pro Tyr Ile Pro Asp Ala Pro Arg Ser Gln Glu  
 20 25 30  
 Ser Ser Val Pro Lys Ile Ser Tyr Ser Ile Thr Val Ala Pro Gln Glu  
 35 40 45  
 Ala Gln Lys Ser Leu Pro Lys Phe Phe Thr Gln Lys Phe Gln Ser Gln  
 50 55 60  
 Cys Lys Ser Glu Pro Pro Ile Thr His His Lys Thr Phe Ile Ile Ala  
 65 70 75 80  
 Thr Pro Arg Glu Arg Ile Leu Arg Phe Gly Ser Ser Phe Glu Ser Gln  
 85 90 95  
 Leu His Asn Thr Ser Gln Ala Gln Thr Ser Ser Pro Trp Asn Leu Phe  
 100 105 110  
 Ser Gln Lys Asn Ser Thr Glu Ala Ser Lys Ala Leu Met Gln Glu Leu  
 115 120 125  
 Thr Met Pro Lys Ser Pro Glu Lys Thr Ser Glu Lys Ala Leu Asp Lys  
 130 135 140  
 Asn Leu Ser Ser Lys Gln Glu Gly Ser Cys Lys Asn Phe Asp Thr Leu  
 145 150 155 160  
 His Leu Gln Gln His Leu Lys Leu Phe Gly Thr Val Asp Ser Leu Tyr  
 165 170 175  
 Ser Gln Ser Leu Asp Ser Glu Gln Gln Glu Leu Leu Gln Ser Arg Arg  
 180 185 190  
 Glu Glu Arg Ser Glu Thr Tyr Ala Asn Gln Gln Ser Ser Glu Lys Lys  
 195 200 205  
 Ile Glu Thr Lys Val Gln Ile Lys Asp Leu Cys Lys Asp Leu Phe Ser  
 210 215 220  
 Gln Asp Gln Asp Ser Asn Gln Lys Gln Lys Lys Ser Pro Phe Gln Gln  
 225 230 235 240  
 Asp Thr Ser Arg Lys Asn Arg Ile Ala Lys Ala Ala Gln Ala Val Pro  
 245 250 255  
 Val Ile Pro Pro Pro Ser Ile Gly Val Phe Thr Leu Ser Tyr Leu Leu  
 260 265 270  
 Thr Lys Gln Gly Ile Leu Ser Asp Phe Ser Ser Tyr Gly Cys His Lys  
 275 280 285



Asp Ser Val Glu Ser Thr Gln Arg Glu Leu Asp Ala Leu Glu Lys  
 290 295 300  
 Arg Ile Glu Thr Ile Lys Val Ser Ile Glu Lys Glu Lys Arg Glu Arg  
 305 310 315 320  
 Leu Trp Gly Ser Leu Ser Asp Ile Ile Gly Trp Leu Ala Pro Phe Val  
 325 330 335  
 Ser Ile Gly Ile Gly Ile Val Ala Ile Leu Ser Gly Gly Gly Ile Phe  
 340 345 350  
 Ala Phe Ala Gly Phe Phe Ala Gly Leu Ile Ser Leu Val Ile Lys Cys  
 355 360 365  
 Leu Glu Lys Leu Lys Phe Trp Asp Trp Leu Glu Lys His Leu Pro Ile  
 370 375 380  
 Asn Asn Glu Glu Leu Arg Arg Lys Ile Ile Thr Ile Ile Gln Trp Val  
 385 390 395 400  
 Val Tyr Leu Thr Pro Val Ile Leu Ser Ile Cys Thr Leu Lys Val Glu  
 405 410 415  
 Asn Leu Gly Phe Ser Pro Ile Ile Glu Gly Ala Ile Lys Gly Ile Gln  
 420 425 430  
 Pro Ala Ile Glu Ser Thr Met Ala Ala Leu Arg Cys Ala Ile Leu Phe  
 435 440 445  
 Ser Gln Ala Glu Ile Tyr Lys Leu Lys Gly Lys Leu Thr Lys Ile Gln  
 450 455 460  
 Leu Asp Ile Glu Leu Lys Ser Phe Asp Arg Asp Asp His Tyr Glu Arg  
 465 470 475 480  
 Ser Gln Glu Leu Leu Asp Asn Met Glu Ser Ser Phe Glu Ala Leu Ser  
 485 490 495  
 Arg Ile Leu Asn Tyr Met Arg Glu Leu Asp Gln Val Tyr Leu His Ser  
 500 505 510  
 Leu Arg Gly  
 515

&lt;210&gt;1095

&lt;211&gt;191

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1095

Cys Ile Glu Val Ile Glu Arg Thr Tyr Gly His Leu His Leu Gln Pro  
 1 5 10 15  
 Thr Pro Leu Met Ser His Leu Asn Tyr Leu Leu Glu Lys Ile Ala Ala  
 20 25 30  
 Ser Ser Lys Glu Asp Phe Pro Phe Pro Asp Asp Leu Glu Ser Tyr Leu  
 35 40 45  
 Glu Gly Tyr Val Pro Asp Lys Asn Ile Ala Leu Asp Thr Tyr Gln Lys  
 50 55 60  
 Ile Phe Lys Ile Ser Ser Glu Asp Leu Glu Lys Val Tyr Lys Glu Gly  
 65 70 75 80  
 Tyr His Ala Tyr Leu Asp Lys Asp Tyr Ala Lys Ser Ile Thr Val Phe  
 85 90 95  
 Arg Trp Leu Val Phe Phe Asn Pro Phe Val Ser Lys Phe Trp Phe Ser  
 100 105 110  
 Leu Gly Ala Ser Leu His Met Ser Glu Gln Tyr Ser Gln Ala Leu His  
 115 120 125  
 Ala Tyr Gly Val Thr Ala Val Leu Arg Asp Lys Asp Pro Tyr Pro His  
 130 135 140  
 Tyr Tyr Ala Tyr Ile Cys Tyr Thr Leu Thr Asp Glu His Glu Glu Ala  
 145 150 155 160  
 Glu Lys Ala Leu Glu Met Ala Trp Val Arg Ala Gln His Lys Pro Leu  
 165 170 175  
 Tyr Asn Glu Leu Lys Glu Glu Ile Leu Asp Ile Arg Lys His Lys  
 180 185 190

&lt;210&gt;1096

&lt;211&gt;339

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1096

Thr Thr Ala Ser Ser Ser Asn Thr Lys Arg Leu Cys Cys Lys Lys Thr  
 1 5 10 15  
 Gln Arg Arg Pro Ser Pro Glu Thr Gln Ala Arg Ala Ser Leu Ser Gln  
 20 25 30  
 Ala Ser Ser Ser Ser Gln Arg Ser Leu Pro Pro Gln Glu Ser Ala Pro  
 35 40 45  
 Glu Arg Thr Leu Leu Glu Gln Gln Lys Ala Ser Ser Phe Ser Pro Leu  
 50 55 60  
 Ser Gln Phe Ser Ala Glu Lys Gln Lys Glu Ala Leu Thr Thr Ser Lys  
 65 70 75 80  
 Ser His Glu Leu Tyr Lys Glu Arg Asp Gln Asp Arg Gln Gln Arg Glu  
 85 90 95  
 Gln His Asp Arg Lys His Asp Gln Glu Glu Asp Ala Glu Ser Lys Lys  
 100 105 110  
 Lys Lys Lys Lys Arg Gly Leu Gly Val Glu Ala Val Ala Glu Glu Pro  
 115 120 125  
 Gly Glu Asn Leu Asp Ile Ala Ala Leu Ile Phe Ser Asp Gln Met Arg  
 130 135 140  
 Pro Pro Ala Glu Glu Thr Ser Asn Lys Glu Thr Thr Phe Lys Lys Lys  
 145 150 155 160  
 Leu Pro Ser Pro Met Ser Val Phe Ser Arg Phe Ile Pro Ser Lys Asn  
 165 170 175  
 Pro Leu Ser Val Gly Ser Ser Ile His Asn Pro Ile Gln Thr Pro Lys  
 180 185 190  
 Val Glu Asn Val Phe Leu Arg Phe Met Lys Leu Met Ala Arg Ile Leu  
 195 200 205  
 Gly Gln Ala Glu Ala Glu Ala Asn Glu Leu Tyr Met Arg Val Lys Gln  
 210 215 220  
 Arg Thr Asp Asp Val Asp Thr Leu Thr Val Leu Ile Ser Lys Ile Asn  
 225 230 235 240  
 Asn Glu Lys Lys Asp Ile Asp Trp Ser Glu Asn Glu Glu Met Lys Ala  
 245 250 255  
 Leu Leu Asn Arg Ala Lys Glu Ile Gly Val Thr Ile Asp Lys Glu Lys  
 260 265 270  
 Tyr Thr Trp Thr Gln Glu Glu Lys Arg Leu Leu Lys Glu Asn Val Gln  
 275 280 285  
 Met Arg Lys Glu Asn Met Glu Lys Ile Thr Gln Met Glu Arg Thr Asp  
 290 295 300  
 Met Gln Arg His Leu Gln Glu Ile Ser Gln Cys His Gln Ala Arg Ser  
 305 310 315 320  
 Asn Val Leu Lys Leu Leu Lys Glu Leu Met Asp Thr Phe Ile Tyr Asn  
 325 330 335  
 Leu Arg Pro

&lt;210&gt;1097

&lt;211&gt;211

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1097

Phe Ser Phe Phe Phe Tyr Ala Leu Lys Leu Gln Ile Met Asn Met Pro  
 1 5 10 15  
 Val Pro Ser Ala Val Pro Ser Ala Asn Ile Thr Leu Lys Glu Asp Ser  
 20 25 30  
 Ser Thr Val Ser Thr Ala Ser Gly Ile Leu Lys Thr Ala Thr Gly Glu  
 35 40 45  
 Val Leu Val Ser Cys Thr Ala Leu Glu Gly Ser Ser Ser Thr Asp Ala  
 50 55 60  
 Leu Ile Ser Leu Ala Leu Gly Gln Ile Ile Leu Ala Thr Gln Gln Glu  
 65 70 75 80  
 Leu Leu Leu Gln Ser Thr Asn Val His Gln Leu Leu Phe Leu Pro Pro  
 85 90 95  
 Glu Val Val Glu Leu Glu Ile Gln Val Val Asp Leu Leu Val Gln Leu  
 100 105 110  
 Glu His Ala Glu Thr Ile Thr Ser Glu Pro Gln Glu Thr Gln Thr Gln

115 120 125  
 Ser Arg Ser Glu Gln Thr Leu Pro Gln Gln Ser Ser Ser Lys Cln Ser  
 130 135 140  
 Ala Leu Ser Pro Arg Ser Leu Lys Pro Glu Ile Ser Asp Ser Lys Gln  
 145 150 155 160  
 Gln Gln Ala Leu Gln Thr Pro Lys Asp Ser Ala Val Arg Lys His Ser  
 165 170 175  
 Glu Asp Arg His Leu Arg His Lys Leu Ala Leu Pro Tyr Leu Arg Gln  
 180 185 190  
 Ala Gln Val Leu Arg Asp Pro Tyr Leu Arg Lys Lys Val Arg Gln Lys  
 195 200 205  
 Glu His Tyr  
 210

&lt;210&gt;1098

&lt;211&gt;106

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1098

Ile Phe Leu Glu Ile Phe Ile Met Lys Lys Val Val Thr Leu Ser Ile  
 1 5 10 15  
 Ile Phe Phe Ala Thr Tyr Cys Ala Ser Glu Leu Ser Ala Val Thr Val  
 20 25 30  
 Val Ala Val Pro Leu Ser Glu Ala Pro Gly Lys Ile Gln Val Arg Pro  
 35 40 45  
 Val Val Gly Leu Gln Phe Gln Glu Glu Gln Gly Ser Val Pro Tyr Ser  
 50 55 60  
 Phe Tyr Tyr Pro Tyr Asp Tyr Gly Tyr Tyr Tyr Pro Glu Thr Tyr Gly  
 65 70 75 80  
 Tyr Thr Lys Asn Thr Gly Gln Glu Ser Arg Glu Cys Tyr Thr Arg Phe  
 85 90 95  
 Glu Asp Gly Thr Ile Phe Tyr Glu Cys Asp  
 100 105

&lt;210&gt;1099

&lt;211&gt;301

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1099

Met Thr Met Pro Ser Thr Gln Phe His Thr Thr Ile Leu Glu Gln Phe  
 1 5 10 15  
 Ser Leu Phe Leu Ser Val Asp Arg Gly Leu Cys Cln Gln Ser Ile Ala  
 20 25 30  
 Ala Tyr Arg Gln Asp Ile Ser Ser Phe Leu Thr Ile Ser Ala Ile Ser  
 35 40 45  
 Ser Pro Gln Asp Ile Ser Gln Asn Ser Val Tyr Ile Phe Ala Glu Glu  
 50 55 60  
 Leu Tyr Arg Arg Lys Glu Ala Glu Thr Thr Leu Ala Arg Arg Leu Ile  
 65 70 75 80  
 Ala Leu Lys Val Phe Phe Leu Phe Leu Lys Asp Gln Gln Leu Leu Pro  
 85 90 95  
 Tyr Pro Pro Ile Ile Glu His Pro Lys Ile Trp Lys Arg Leu Pro Ser  
 100 105 110  
 Val Leu Thr Pro Gln Glu Val Asp Ala Leu Leu Ala Val Pro Leu Gln  
 115 120 125  
 Met Glu Lys Asn Pro Arg His Leu Ala Phe Arg Asp Thr Ala Ile Leu  
 130 135 140  
 His Thr Leu Tyr Ser Thr Gly Val Arg Val Ser Glu Leu Cys Asp Leu  
 145 150 155 160  
 Arg Leu Gly His Val Ser Asp Asp Cys Ile Arg Val Thr Gly Lys Gly  
 165 170 175  
 Ser Lys Thr Arg Leu Val Pro Leu Gly Ser Arg Ala Arg Glu Ala Ile  
 180 185 190  
 Asp Ala Tyr Leu Cys Pro Phe Arg Asp Gln Tyr Gln Lys Lys Asn Pro  
 195 200 205  
 His Glu Asp His Leu Phe Leu Ser Thr Arg Gly His Lys Leu Glu Arg

210 215 220  
 Ser Cys Val Trp Arg Arg Ile His Asn Tyr Ala Lys Gln Val Thr Ser  
 225 230 235 240  
 Lys Pro Val Ser Pro His Ser Leu Arg His Ala Phe Ala Thr His Leu  
 245 250 255  
 Leu Asp Asn Lys Ala Asp Leu Arg Val Ile Gln Glu Met Leu Gly His  
 260 265 270  
 Ala Arg Ile Ala Ser Thr Glu Val Tyr Thr His Val Ala Asp Ser  
 275 280 285  
 Leu Ile Glu Lys Phe Leu Ala His His Pro Arg Asn Leu  
 290 295 300  
 <210>1100  
 <211>353  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1100  
 Val Glu Gly Ile Val Ile Leu Ala Asn Glu Cys Asn Phe Ser Ile Gly  
 1 5 10 15  
 Ser Gly Glu Phe Ser Ser Tyr Arg Glu Lys Thr Met Glu Arg Lys Arg  
 20 25 30  
 Phe Ile Asp Cys Asp Ser Thr Lys Ile Leu Gln Glu Leu Ala Leu Asn  
 35 40 45  
 Pro Leu Asp Leu Thr Ala Pro Gly Val Leu Ser Ala Glu Arg Ile Lys  
 50 55 60  
 Lys Phe Ser Leu Leu Gly Gly Phe Thr Phe Ser Phe Ala Thr Glu  
 65 70 75 80  
 Arg Leu Asp Asp Ala Ile Leu Ala Ala Leu Ile Ser Leu Ala Glu Glu  
 85 90 95  
 Arg Gly Leu His Glu Ser Met Leu Ala Met Gln Gln Gly Gln Val Val  
 100 105 110  
 Asn Tyr Ile Glu Gly Phe Pro Ser Glu Met Arg Pro Ala Leu His Thr  
 115 120 125  
 Ala Thr Arg Ala Trp Val Thr Asp Ser Ser Phe Thr Gly Glu Ala Glu  
 130 135 140  
 Asp Ile Ala Val Arg Ser Arg Val Glu Ala Gln Arg Leu Lys Asp Phe  
 145 150 155 160  
 Leu Thr Lys Val Arg Ser Gln Phe Thr Thr Ile Val Gln Ile Gly Ile  
 165 170 175  
 Gly Gly Ser Glu Leu Gly Pro Lys Ala Leu Tyr Arg Ala Leu Arg Ala  
 180 185 190  
 Tyr Cys Pro Thr Asp Lys His Val His Phe Ile Ser Asn Ile Asp Pro  
 195 200 205  
 Asp Asn Gly Ala Glu Val Leu Asp Thr Ile Asp Cys Ala Lys Ala Leu  
 210 215 220  
 Val Val Val Val Ser Lys Ser Gly Thr Thr Ile Glu Thr Ala Val Asn  
 225 230 235 240  
 Glu Ala Phe Phe Ala Asp Tyr Phe Ala Lys Lys Gly Leu Ser Phe Lys  
 245 250 255  
 Asp His Phe Ile Ala Val Thr Cys Glu Gly Ser Pro Met Asp Asp Thr  
 260 265 270  
 Gly Lys Tyr Leu Glu Val Phe His Leu Trp Glu Ser Ile Gly Gly Arg  
 275 280 285  
 Phe Ser Ser Thr Ser Met Val Gly Gly Val Val Leu Gly Phe Ala Tyr  
 290 295 300  
 Gly Phe Glu Val Phe Leu Gln Leu Leu Gln Gly Ala Ser Ala Met Asp  
 305 310 315 320  
 Gln Ile Ala Leu Gln Pro Asn Ala Arg Glu Asn Leu Pro Met Leu Ser  
 325 330 335  
 Ala Leu Ile Ser Ile Trp Asn Arg Asn Phe Leu Gly Tyr Pro Thr Glu  
 340 345 350  
 Ala Val Ile Pro Tyr Ser Ser Gly Leu Glu Phe Phe Pro Ala His Leu  
 355 360 365  
 Gln Gln Cys Cys Met Glu Ser Asn Gly Lys Ser Ile Val Gln Asp Gly  
 370 375 380

Arg Arg Val Gly Phe Ser Thr Ser Pro Val Ile Trp Gly Pro Gly  
 385 390 395 400  
 Thr Asn Gly Gln His Ser Phe Phe Gln Cys Leu His Gln Gly Thr Asp  
 405 410 415  
 Ile Ile Pro Val Glu Phe Ile Gly Phe Glu Lys Ser Gln Lys Gly Glu  
 420 425 430  
 Asp Ile Ser Phe Gln Gly Thr Thr Ser Ser Gln Lys Leu Phe Ala Asn  
 435 440 445  
 Met Ile Ala Gln Ala Ile Ala Leu Ala Cys Gly Ser Glu Asn Thr Asn  
 450 455 460  
 Pro Asn Lys Asn Phe Asp Gly Asn Arg Pro Ser Ser Val Leu Val Ser  
 465 470 475 480  
 Ser Gln Leu Asn Pro Tyr Ser Leu Gly Glu Leu Leu Ser Tyr Tyr Glu  
 485 490 495  
 Asn Lys Ile Val Phe Gln Gly Phe Cys Trp Gly Ile Asn Ser Phe Asp  
 500 505 510  
 Gln Glu Gly Val Ser Leu Gly Lys Ala Leu Ala Asn Arg Val Leu Glu  
 515 520 525  
 Leu Leu Glu Gly Ala Asp Ala Ser Asn Phe Pro Glu Ala Ala Ser Leu  
 530 535 540  
 Leu Thr Leu Phe Asn Ile Lys Phe Arg  
 545 550  
 <210>1101  
 <211>523  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1101  
 Asn Met Pro Gly Ser Val Ser Ser Pro Pro Leu Ser Pro Val Ile Val  
 1 5 10 15  
 Arg Glu Arg Val Pro Ser Ser Ser Gly Ser Asp Leu Ile Gln Pro His  
 20 25 30  
 Ala Val Leu Lys Ile Ser Ile Leu Ile Phe Ala Leu Val Thr Ile Leu  
 35 40 45  
 Gly Ile Val Leu Val Val Ser Ser Ala Leu Gly Ala Leu Pro Ser Leu  
 50 55 60  
 Val Leu Thr Val Ser Gly Cys Ile Ala Ile Ala Val Gly Leu Ile Gly  
 65 70 75 80  
 Leu Gly Ile Leu Val Thr Arg Leu Ile Leu Ser Thr Ile Arg Lys Val  
 85 90 95  
 Asp Ala Met Gly Tyr Asp Ala Ala Val Lys Glu Glu Gln Tyr Leu Ser  
 100 105 110  
 Arg Ile Arg Glu Leu Glu Ser Glu Asn Arg Glu Ile Arg Asp Arg Asn  
 115 120 125  
 Arg Ala Val Glu Asp Gln Cys Ala His Leu Ser Glu Glu Asn Lys Asp  
 130 135 140  
 Leu Arg Asp Pro Glu Tyr Leu His Gly Met Thr Glu Arg Leu Ile Ala  
 145 150 155 160  
 Ser Leu Glu Ile Glu Asn Gln Ala Leu Val Ala Glu Asn Ile Leu Leu  
 165 170 175  
 Lys Asp Trp Asn Ala Ser Leu Ser Arg Asp Phe Arg Ala Tyr Lys Gln  
 180 185 190  
 Lys Phe Pro Leu Gly Ala Leu Glu Pro Trp Lys Glu Asp Ile Ala Cys  
 195 200 205  
 Ile Met Glu Gln Asn Leu Phe Leu Lys Pro Glu Cys Ile Ala Met Val  
 210 215 220  
 Lys Ser Leu Pro Leu Glu Thr Gln Arg Leu Phe Leu Tyr Pro Lys Gly  
 225 230 235 240  
 Phe Gln Ser Leu Val Asn Arg Phe Ala Pro Arg Ser Arg Phe Phe Gln  
 245 250 255  
 Thr Pro Lys Tyr Glu Tyr Asn Ser Arg Asn Glu Asn Glu Asp Gly Lys  
 260 265 270  
 Val Ala Ala Val Cys Ala Arg Leu Lys Lys Glu Phe Phe Ser Ala Val  
 275 280 285  
 Leu Gly Ala Cys Ser Tyr Glu Glu Leu Gly Gly Ile Cys Glu Arg Ala

290 295 300  
 Val Ala Leu Lys Glu Thr Leu Pro Leu Pro Glu Ala Val Tyr Asp Thr  
 305 310 315 320  
 Leu Val Gln Glu Phe Pro Asn Leu Leu Thr Ala Glu Ser Leu Trp Lys  
 325 330 335  
 Glu Trp Cys Phe Tyr Ser Tyr Pro Tyr Leu Arg Pro Tyr Leu Ser Val  
 340 345 350  
 Asp Tyr Cys Lys Arg Leu Phe Val Gln Leu Phe Glu Glu Cys Leu  
 355 360 365  
 Lys Leu Phe Thr Thr Gly Ser Pro Glu Asp Gln Ala Leu Val Arg Leu  
 370 375 380  
 Phe Ser Tyr Tyr Arg Asn His Ile Pro Ala Val Leu Ala Ser Phe Gly  
 385 390 395 400  
 Leu Pro Pro Pro Glu Thr Gly Gly Ser Val Phe Val Leu Leu Pro Lys  
 405 410 415  
 Gln Glu Asn Leu Leu Trp Ser Gln Ile Glu Val Leu Ala Thr Arg Tyr  
 420 425 430  
 Leu Lys Asp Thr Phe Val Arg Asn Ser Glu Trp Thr Gly Ser Phe Glu  
 435 440 445  
 Met Met Phe Ser Tyr Asn Glu Met Cys Lys Glu Ile Ser Glu Gly Arg  
 450 455 460  
 Ile Arg Phe Ala Glu Asp Tyr Glu Thr Arg His Ser Glu Glu Phe Pro  
 465 470 475 480  
 Pro Ser Pro Leu Ser Glu Glu Gly Glu Gly Glu Phe Leu Pro Pro  
 485 490 495  
 Cys Ser Glu Glu Glu Val Ser Val Leu Glu Arg Pro Asp Leu Asp Val  
 500 505 510  
 Asp Ser Met Trp Val Trp His Pro Ser Gly Pro  
 515 520

&lt;210&gt;1102

&lt;211&gt;335

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1102

Phe Phe Leu Lys Gly Val Arg Met Ala Phe Lys Glu Val Val Arg Val  
 1 5 10 15  
 Ala Val Thr Gly Gly Lys Gly Gln Ile Ala Tyr Asn Phe Leu Phe Ala  
 20 25 30  
 Leu Ala His Gly Asp Val Phe Gly Val Asp Arg Gly Val Asp Leu Arg  
 35 40 45  
 Ile Tyr Asp Val Pro Gly Thr Glu Arg Ala Leu Ser Gly Val Arg Met  
 50 55 60  
 Glu Leu Asp Asp Gly Ala Tyr Pro Leu Asn His Arg Leu Arg Val Thr  
 65 70 75 80  
 Thr Ser Leu Asn Asp Ala Phe Asp Gly Ile Asp Ala Ala Phe Leu Ile  
 85 90 95  
 Gly Ala Val Pro Arg Gly Pro Gly Met Glu Arg Gly Asp Leu Leu Lys  
 100 105 110  
 Gln Asn Gly Gln Ile Phe Ser Leu Gln Gly Ala Ala Leu Asn Thr Ala  
 115 120 125  
 Ala Lys Arg Asp Ala Lys Ile Phe Val Val Gly Asn Pro Val Asn Thr  
 130 135 140  
 Asn Cys Trp Ile Ala Met Lys His Ala Pro Arg Leu His Arg Lys Asn  
 145 150 155 160  
 Phe His Ala Met Leu Arg Leu Asp Gln Asn Arg Met His Ser Met Leu  
 165 170 175  
 Ala His Arg Ala Glu Val Pro Leu Glu Glu Val Ser Arg Val Val Ile  
 180 185 190  
 Trp Gly Asn His Ser Ala Lys Gln Val Pro Asp Phe Thr Gln Ala Arg  
 195 200 205  
 Ile Ser Gly Lys Pro Ala Ala Glu Val Ile Gly Asp Arg Asp Trp Leu  
 210 215 220  
 Glu Asn Ile Leu Val His Ser Val Gln Asn Arg Gly Ser Ala Val Ile  
 225 230 235 240

Glu Ala Arg Gly Lys Ser Ser Ala Ala Ser Ala Ser Arg Leu Ala  
 245 250 255  
 Glu Ala Ala Arg Ser Ile Phe Cys Pro Lys Ser Asp Glu Trp Phe Ser  
 260 265 270  
 Ser Gly Val Cys Ser Asp His Asn Pro Tyr Gly Ile Pro Glu Asp Leu  
 275 280 285  
 Ile Phe Gly Phe Pro Cys Arg Met Leu Pro Ser Gly Asp Tyr Glu Ile  
 290 295 300  
 Ile Pro Gly Leu Pro Trp Glu Pro Phe Ile Arg Asn Lys Ile Gln Ile  
 305 310 315 320  
 Ser Leu Asp Glu Ile Ala Gln Glu Lys Ala Ser Val Ser Ser Leu  
 325 330 335

&lt;210&gt;1103

&lt;211&gt;82

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1103

Ser Glu His Thr Pro Glu Glu Asn His Ser Ser Leu Leu Gly Gln Lys  
 1 5 10 15  
 Ile Asp Arg Ala Ala Ser Ala Ser Ala Arg Asp Ala Asp Ala Ala Glu  
 20 25 30  
 Asp Phe Pro Leu Ala Ser Ile Thr Ala Leu Pro Arg Phe Cys Thr Glu  
 35 40 45  
 Cys Thr Lys Met Phe Ser Asn Gln Ser Arg Ser Pro Ile Thr Ser Ala  
 50 55 60  
 Ala Gly Phe Pro Glu Ile Arg Ala Cys Val Lys Ser Gly Thr Cys Phe  
 65 70 75 80  
 Ala Glu

&lt;210&gt;1104

&lt;211&gt;275

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1104

Ser Xaa Cys Ala Ser Lys Ala Leu Asn Val Pro Ile Val Ile Ser Gln  
 1 5 10 15  
 Gly Ile Leu Arg Pro Ala Ile Asp Glu Asp Gln Ala Gln Leu Phe Thr  
 20 25 30  
 Glu Arg Val Glu Glu Phe Pro Lys Glu Val Glu Trp Trp Glu Xaa Ala  
 35 40 45  
 Arg Cys Glu Ile Ser Ile Pro Ser Met Val Ile Pro Pro Asn Leu Gly  
 50 55 60  
 Ala Leu Phe Ile Lys Ser Gly Val Thr Leu Asn Asn Asp Leu Tyr Ile  
 65 70 75 80  
 Gln Gly Leu Ala Asp Ala Cys Met Lys Leu Gly Thr Gln Phe Tyr Asp  
 85 90 95  
 Glu Leu Ile Glu Asp Leu Ala Asp Ile Glu Glu Phe Tyr Asp His Ile  
 100 105 110  
 Ile Val Thr Pro Gly Ala Asn Ala Ser Ile Leu Pro Glu Leu Lys Asp  
 115 120 125  
 Met Pro Val Asn Lys Val Lys Gly Gln Leu Leu Glu Ile Ser Trp Pro  
 130 135 140  
 Lys Asp Leu Ala Met Leu Ser Phe Ser Ile Asn Ala His Lys Tyr Met  
 145 150 155 160  
 Val Ala Asn Thr Gln Lys Asn Thr Cys Ile Leu Gly Ala Thr Phe Glu  
 165 170 175  
 His Asn Gln Pro Glu Glu Thr Pro Asp Pro Ala Ile Ala Tyr Gln Glu  
 180 185 190  
 Ile Met Pro Pro Val Leu Ser Leu Phe Pro Gly Leu Lys Asp Ala Gln  
 195 200 205  
 Val Leu His Cys Tyr Ala Gly Met Arg Ser Ser Ser Lys Ser Arg Leu  
 210 215 220  
 Pro Val Ile Ser Arg Ile Arg Glu Lys Leu Trp Phe Leu Gly Gly Leu  
 225 230 235 240

Gly Ser Lys Gly Leu Leu Tyr His Gly Ile Thr Gly Asp Met Leu Ala  
 245 250 255  
 Gln Ala Val Leu Arg Lys Ser Thr Ala Tyr Ile Ala Lys Glu Phe Leu  
 260 265 270  
 Phe Thr Ile  
 275  
 <210>1105  
 <211>485  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1105  
 Met Thr Ser Arg Thr Lys Ser Ser Lys Asn Leu Gly Thr Ile Ala Leu  
 1 5 10 15  
 Ala Gly Met Val Val Ser Ser Ile Ile Gly Gly Gly Ile Phe Ser Leu  
 20 25 30  
 Pro Gln Asn Met Ala Ala Thr Ala Gly Ala Gly Ala Val Ile Leu Ser  
 35 40 45  
 Trp Ile Leu Thr Gly Phe Gly Met Phe Phe Ile Ala Asn Thr Phe Arg  
 50 55 60  
 Ile Leu Ser Thr Ile Arg Pro Asp Leu Lys Glu Gly Ile Tyr Met Tyr  
 65 70 75 80  
 Ser Arg Glu Gly Phe Gly Pro Tyr Ile Gly Phe Thr Ile Gly Trp Gly  
 85 90 95  
 Tyr Trp Leu Cys Gln Ile Phe Gly Asn Val Gly Tyr Ala Val Ile Thr  
 100 105 110  
 Met Asp Ala Leu Asn Tyr Phe Phe Pro Pro Tyr Phe Gln Gly Gly Asn  
 115 120 125  
 Thr Leu Pro Ala Ile Leu Gly Gly Ser Ile Leu Ile Trp Val Phe Asn  
 130 135 140  
 Phe Ile Val Leu Lys Gly Ile Arg Gln Ala Ser Ile Ile Asn Val Ile  
 145 150 155 160  
 Gly Thr Ile Phe Lys Ile Ile Pro Leu Ile Ile Phe Ile Ile Leu Thr  
 165 170 175  
 Ala Phe Phe Phe Lys Leu Ala Val Phe Lys Thr Asp Phe Trp Gly His  
 180 185 190  
 Ala Val Thr Lys Ala Gln Pro Ser Leu Gly Ser Val Ser Ser Gln Leu  
 195 200 205  
 Lys Gly Thr Met Leu Val Thr Leu Trp Ala Phe Ile Gly Ile Glu Gly  
 210 215 220  
 Ala Val Val Met Ser Gly Arg Ala Lys Asn Pro Leu Ser Val Gly Gln  
 225 230 235 240  
 Ala Thr Val Leu Gly Phe Leu Gly Cys Leu Thr Ile Tyr Ile Leu Phe  
 245 250 255  
 Ser Leu Leu Pro Phe Gly Ser Leu Phe Gln His Gln Leu Ala Asn Ile  
 260 265 270  
 Pro Asn Pro Ser Thr Ala Gly Val Leu Asp Ile Leu Val Gly Lys Trp  
 275 280 285  
 Gly Glu Val Leu Met Asn Val Gly Leu Ile Ile Ala Val Leu Ser Ser  
 290 295 300  
 Trp Leu Ser Trp Thr Ile Val Ala Glu Ile Pro Phe Ser Ala Ala  
 305 310 315 320  
 Lys Asn Gly Thr Phe Pro Glu Ile Phe Thr Ile Glu Asn Lys Glu Lys  
 325 330 335  
 Ser Pro Ser Val Ser Leu Tyr Ile Thr Ser Ser Val Met Gln Leu Ala  
 340 345 350  
 Met Leu Leu Val Tyr Phe Ser Ser Asn Ala Trp Asn Thr Met Leu Ser  
 355 360 365  
 Ile Thr Gly Val Met Val Leu Pro Ala Tyr Leu Ala Ser Ala Ala Phe  
 370 375 380  
 Leu Phe Lys Leu Ser Lys Ser Lys Thr Tyr Pro Lys Lys Gly Ser Ile  
 385 390 395 400  
 Lys Ala Pro Leu Ala Met Ile Thr Gly Ile Leu Gly Val Val Tyr Ser  
 405 410 415  
 Leu Trp Leu Ile Tyr Ala Gly Gly Leu Lys Tyr Leu Phe Met Ala Leu



430 425  
 Val Leu Leu Ala Leu Gly Ile Pro Phe Tyr Ile Asp Ala Gly Lys Lys  
 435 440 445  
 Lys Lys Asn Ala Lys Thr Phe Phe Ala Lys Lys Glu Ile Val Gly Met  
 450 455 460  
 Thr Phe Ile Gly Leu Leu Ala Leu Thr Ala Ile Phe Leu Phe Ser Thr  
 465 470 475 480  
 Gly Arg Ile Lys Ile  
 485

&lt;210&gt;1106

&lt;211&gt;196

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1106

Leu Met Ala Tyr Gly Thr Arg Tyr Pro Thr Leu Ala Phe His Thr Gly  
 1 5 10 15  
 Gly Ile Gly Glu Ser Asp Asp Gly Met Pro Pro Gln Pro Phe Glu Thr  
 20 25 30  
 Phe Cys Tyr Asp Ser Ala Leu Leu Gln Ala Lys Ile Glu Asn Phe Asn  
 35 40 45  
 Ile Val Pro Tyr Thr Ser Val Leu Pro Lys Glu Leu Phe Gly Asn Ile  
 50 55 60  
 Val Pro Val Asp Thr Cys Val Lys Ser Phe Lys His Gly Ala Val Leu  
 65 70 75 80  
 Glu Val Ile Met Ala Gly Arg Gly Ala Leu Ser Asp Gly Thr His  
 85 90 95  
 Ala Ile Ala Thr Gly Ile Gly Ile Cys Trp Gly Lys Asp Lys Asn Gly  
 100 105 110  
 Glu Leu Ile Gly Gly Trp Ala Ala Glu Tyr Val Glu Phe Phe Pro Thr  
 115 120 125  
 Trp Ile Asn Asp Glu Ile Ala Glu Thr His Ala Lys Met Trp Leu Lys  
 130 135 140  
 Lys Ser Leu Gln His Glu Leu Asp Leu Arg Ser Ile Ala Lys His Ser  
 145 150 155 160  
 Glu Phe Gln Phe Phe His Asn Tyr Ile Asn Ile Lys Gln Lys Phe Gly  
 165 170 175  
 Phe Cys Leu Thr Ala Leu Gly Phe Leu Asn Phe Glu Asn Ala Glu Pro  
 180 185 190  
 Ala Lys Val Asn  
 195

&lt;210&gt;1107

&lt;211&gt;165

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1107

Gln Lys Ala Thr Tyr Asn Phe Tyr Gly Tyr Ala Ser Trp Thr Pro Lys  
 1 5 10 15  
 Pro Ser Cys Gly Asp Gly Gln Tyr Ser Val Leu Leu Tyr Ser Thr Arg  
 20 25 30  
 Lys Val Pro Glu Gln Asn Ser Gln Val Thr Gly Trp Ser Leu Asn Ala  
 35 40 45  
 Ala Gln His Ile His Glu Lys Leu Tyr Leu Phe Gly Arg Ile Asn Gly  
 50 55 60  
 Ala Thr Gly Thr Ala Leu Pro Ile Asn Arg Ser Tyr Val Leu Gly Leu  
 65 70 75 80  
 Val Ser Glu Asn Pro Leu Asn Arg His Ser Gln Asp Leu Leu Gly Ile  
 85 90 95  
 Gly Phe Ala Thr Asn Lys Val Asn Ala Lys Ala Ile Ser Asn Val Asn  
 100 105 110  
 Lys Leu Arg Arg Tyr Glu Ser Val Met Glu Ala Phe Ala Thr Ile Gly  
 115 120 125  
 Phe Gly Pro Tyr Ile Ser Leu Thr Pro Asp Phe Gln Leu Tyr Ile His  
 130 135 140  
 Pro Ala Leu Arg Pro Glu Arg Arg Thr Ser Gln Val Tyr Gly Leu Arg

145 150 155 160  
Ala Asn Leu Ser Leu  
165  
<210>1108  
<211>354  
<212>PRT  
<213>*Chlamydia pneumoniae*  
<400>1108  
Asn Asn Lys Lys Lys Asp Tyr Ser Gly Glu Phe Leu Thr Thr Asp Thr  
1 5 10 15  
Val Asp Ser Ile Ala Phe Leu Ser Ser Glu Glu Asn Phe Cys Tyr Ile  
20 35 30  
Lys Thr Ile Leu Phe Phe Arg Val Lys Lys Lys His Tyr Ala Phe Phe  
35 40 45  
Tyr Gly Glu Phe Met Ile Xaa Phe Arg Phe Leu Leu Leu Ser Gly Leu  
50 55 60  
Cys Ala Leu Gly Ile Ser Ser Tyr Ala Glu Thr Pro Lys Glu Thr Thr  
65 70 75 80  
Gly His Tyr His Arg Tyr Lys Ala Arg Ile Gln Lys Lys His Pro Glu  
85 90 95  
Ser Ile Lys Glu Ser Ala Pro Ser Glu Thr Pro His His Asn Ser Leu  
100 105 110  
Leu Ser Pro Val Thr Asn Ile Phe Cys Ser His Pro Trp Lys Asp Gly  
115 120 125  
Ile Ser Val Ser Asn Leu Leu Thr Ser Val Glu Lys Ala Thr Asn Thr  
130 135 140  
Gln Ile Ser Leu Asp Phe Ser Ile Leu Pro Gln Trp Phe Tyr Pro His  
145 150 155 160  
Lys Ala Leu Gly Gln Thr Gln Ala Leu Glu Ile Pro Ser Trp Gln Phe  
165 170 175  
Tyr Phe Ser Pro Ser Thr Thr Trp Thr Leu Tyr Asp Ser Pro Thr Ala  
180 185 190  
Gly Gln Gly Ile Val Asp Phe Ser Tyr Thr Leu Ile His Tyr Trp Gln  
195 200 205  
Thr Asn Gly Val Asp Ala Asn Gln Ala Ala Gly Thr Ala Ser Ser Met  
210 215 220  
Asn Asp Tyr Ser Asn Arg Glu Asn Asn Leu Ala Gln Leu Thr Phe Ser  
225 230 235 240  
Gln Thr Phe Pro Gly Asp Phe Leu Thr Leu Ala Ile Gly Gln Tyr Ser  
245 250 255  
Leu Tyr Ala Ile Asp Gly Thr Leu Tyr Asp Asn Asp Gln Tyr Ser Gly  
260 265 270  
Phe Ile Ser Tyr Ala Leu Ser Gln Asn Ala Ser Ala Thr Tyr Ser Leu  
275 280 285  
Gly Ser Thr Gly Ala Tyr Leu Gln Phe Thr Pro Asn Ser Glu Ile Lys  
290 295 300  
Val Gln Leu Gly Phe Gln Asp Ser Tyr Asn Ile Asp Gly Thr Asn Phe  
305 310 315 320  
Ser Ile Tyr Asn Leu Thr Lys Ser Asn Ile Gln Leu Leu Arg Leu Arg  
325 330 335  
Leu Leu Asp Ser Lys Thr Phe Val Trp Arg Trp Thr Val Leu Cys Ile  
340 345 350  
Ala Leu

&lt;210&gt;1109

&lt;211&gt;286

&lt;212&gt;PRT

<213>*Chlamydia pneumoniae*

&lt;400&gt;1109

Lys Thr Ser Trp Gln Lys Tyr Lys Lys Tyr Leu Ser Tyr Ser Ile Leu  
1 5 10 15  
Val Gln Lys Ile Ala Arg Tyr Val Met Lys Thr Trp Leu Phe Phe Thr  
20 25 30  
Phe Leu Phe Ser Cys Ser Ser Phe Tyr Ala Ser Cys Arg Tyr Ala Glu

1112

Pro Lys Leu Glu Glu Leu Leu Ser Tyr Asn Tyr Ser Dyr Leu Ser Glu  
 225 230 235 240  
 Lys Ser His Ile Tyr Gly Leu Ile Gly Asp Pro Val Asp Arg Ser Ile  
 245 250 255  
 Ser His Leu Ser His Asn Phe Leu Leu Ser Lys Leu Ser Leu Asn Ala  
 260 265 270  
 Thr Tyr Ile Lys Phe Pro Val Thr Ile Gly Glu Val Val Thr Phe Phe  
 275 280 285  
 Ser Ala Ile Arg Asp Leu Pro Phe Ser Gly Leu Ser Val Thr Met Pro  
 290 295 300  
 Leu Lys Thr Ala Ile Phe Asp His Val Asp Ala Leu Asp Ala Ser Ala  
 305 310 315 320  
 Gln Leu Cys Glu Ser Ile Asn Thr Leu Val Phe Arg Asn Gln Lys Ile  
 325 330 335  
 Leu Gly Tyr Asn Thr Asp Gly Glu Gly Val Ala Lys Leu Leu Lys Gln  
 340 345 350  
 Lys Asn Ile Ser Val Asn Asn Lys His Ile Ala Ile Val Gly Ala Gly  
 355 360 365  
 Gly Ala Ala Lys Ala Ile Ala Thr Leu Ala Met Gln Gly Ala Asn  
 370 375 380  
 Leu His Ile Phe Asn Arg Thr Leu Ser Ser Ala Ala Ala Leu Ala Thr  
 385 390 395 400  
 Cys Cys Lys Gly Lys Ala Tyr Pro Leu Gly Ser Leu Glu Asn Phe Lys  
 405 410 415  
 Thr Ile Asp Ile Ile Ile Asn Cys Leu Pro Pro Glu Val Thr Phe Pro  
 420 425 430  
 Trp Arg Phe Pro Pro Ile Val Met Asp Ile Asn Thr Lys Pro His Pro  
 435 440 445  
 Ser Pro Tyr Leu Glu Arg Ala Gln Lys His Gly Ser Leu Ile Ile His  
 450 455 460  
 Gly Tyr Glu Met Phe Ile Glu Gln Ala Leu Leu Gln Phe Ala Leu Trp  
 465 470 475 480  
 Phe Pro Asp Phe Leu Thr Pro Glu Ser Cys Asp Ser Phe Arg Asn Tyr  
 485 490 495  
 Val Lys Asn Phe Met Ala Lys Val  
 500

&lt;210&gt;1111

&lt;211&gt;384

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1111

Met Leu Gln Thr Ile Met Ser Glu Thr Ile Ile Thr Thr Pro His Val  
 1 5 10 15  
 Val Lys Leu Ile Ser Asn Phe Phe Gln Lys Lys Leu Phe Ser Ser Ile  
 20 25 30  
 Ser Thr Ala Tyr Pro Leu Val Ile Ile Thr Asp Val Ser Val Gln Gln  
 35 40 45  
 His Leu Leu Gly Pro Ile Leu Asp His Ile Lys Met Leu Gly Tyr Gln  
 50 55 60  
 Val Ile Val Leu Thr Phe Pro Pro Gly Glu Pro Asn Lys Thr Trp Glu  
 65 70 75 80  
 Thr Phe Ile Ser Leu Gln Tyr Gln Leu Val Asp Gln Asn Ile Ser Pro  
 85 90 95  
 Lys Ser Ser Ile Ile Gly Ile Gly Gly Gly Thr Val Leu Asp Met Thr  
 100 105 110  
 Gly Phe Leu Ala Ala Thr Tyr Cys Arg Gly Leu Pro Leu Tyr Leu Ile  
 115 120 125  
 Pro Thr Thr Ile Thr Ala Met Val Asp Thr Ser Ile Gly Gly Lys Asn  
 130 135 140  
 Gly Ile Asn Leu Arg Gly Ile Lys Asn Arg Leu Gly Thr Phe Tyr Leu  
 145 150 155 160  
 Pro Lys Glu Val Trp Met Cys Pro Gln Phe Leu Ser Thr Leu Pro Arg  
 165 170 175  
 Glu Glu Trp Tyr His Gly Ile Ala Glu Ala Ile Lys His Gly Phe Ile

180 185  
 Ala Asp Ala Tyr Leu Trp Glu Phe Leu Asn Ser His Ser Lys Met Leu  
 195 200 205  
 Phe Ser Ser Ser Gln Ile Leu His Glu Phe Ile Lys Arg Asn Cys Gln  
 210 215 220  
 Ile Lys Ala Ala Ile Val Ala Glu Asp Pro Tyr Asp Arg Ser Leu Arg  
 225 230 235 240  
 Lys Ile Leu Asn Phe Gly His Ser Ile Ala His Ala Ile Glu Thr Leu  
 245 250 255  
 Ala Lys Gly Thr Val Asn His Gly Gln Ala Val Ser Val Gly Met Met  
 260 265 270  
 Ile Glu Thr Arg Ile Ser Leu Ala Glu Gly Val Met Lys Thr Pro Gln  
 275 280 285  
 Leu Ile Asp Gln Leu Glu Arg Leu Leu Lys Arg Phe Asn Leu Pro Ser  
 290 295 300  
 Thr Leu Lys Asp Leu Gln Ser Ile Val Pro Glu His Leu His Asn Ser  
 305 310 315 320  
 Leu Tyr Ser Pro Glu Asn Ile Ile Tyr Thr Leu Gly Tyr Asp Lys Lys  
 325 330 335  
 Asn Leu Ser Gln His Glu Leu Lys Met Ile Met Ile Glu His Leu Gly  
 340 345 350  
 Arg Ala Ala Pro Phe Asn Gly Thr Tyr Cys Ala Ser Pro Asn Met Glu  
 355 360 365  
 Ile Leu Tyr Asp Ile Leu Trp Ser Glu Cys His Val Met Arg His Cys  
 370 375 380  
 <210>1112  
 <211>376  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1112  
 Thr Ser Val Ser Arg Ser His Tyr Leu Val Lys Val Met Lys Asn Ser  
 1 5 10 15  
 Phe Gly Ser Leu Phe Ser Phe Thr Thr Trp Gly Glu Ser His Gly Pro  
 20 25 30  
 Ser Ile Gly Val Val Ile Asp Gly Cys Pro Ala Gly Leu Glu Leu His  
 35 40 45  
 Glu Ser Asp Phe Val Pro Ala Met Lys Arg Arg Arg Pro Gly Asn Pro  
 50 55 60  
 Gly Thr Ser Ser Arg Lys Glu Asn Asp Ile Val Gln Ile Leu Ser Gly  
 65 70 75 80  
 Val Tyr Lys Gly Lys Thr Thr Gly Thr Pro Leu Ser Leu Gln Ile Leu  
 85 90 95  
 Asn Thr Asp Val Asp Ser Ser Pro Tyr Glu Asn Ser Glu Arg Leu Tyr  
 100 105 110  
 Arg Pro Gly His Ser Gln Tyr Thr Tyr Glu Lys Lys Phe Gly Ile Val  
 115 120 125  
 Asp Pro Asn Gly Gly Gly Arg Ser Ser Ala Arg Glu Thr Ala Cys Arg  
 130 135 140  
 Val Ala Ala Gly Val Val Ala Glu Lys Phe Leu Ala Asn Gln Asn Ile  
 145 150 155 160  
 Phe Thr Leu Ala Tyr Leu Ser Ser Leu Gly Ser Leu Thr Leu Pro His  
 165 170 175  
 Tyr Leu Lys Ile Ser Pro Glu Leu Ile His Lys Ile His Thr Ser Pro  
 180 185 190  
 Phe Tyr Ser Pro Leu Pro Asn Glu Lys Ile Gln Glu Ile Leu Thr Ser  
 195 200 205  
 Leu His Asp Asp Ser Asp Ser Leu Gly Gly Val Ile Ser Phe Ile Thr  
 210 215 220  
 Ser Pro Ile His Asp Phe Leu Gly Glu Pro Leu Phe Gly Lys Val His  
 225 230 235 240  
 Ala Leu Leu Ala Ser Ala Leu Met Ser Ile Pro Ala Ala Lys Gly Phe  
 245 250 255  
 Glu Ile Gly Lys Gly Phe Ala Ser Ala Gln Met Arg Gly Ser Gln Tyr  
 260 265 270

Thr Asp Pro Phe Val Met Glu Gly Glu Asn Ile Thr Lys Ser Asn  
 275 280 285  
 Asn Cys Gly Gly Thr Leu Gly Gly Ile Thr Ile Gly Val Pro Ile Glu  
 290 295 300  
 Gly Arg Ile Ala Phe Lys Pro Thr Ser Ser Ile Lys Arg Pro Cys Ala  
 305 310 315 320  
 Thr Val Thr Lys Thr Lys Lys Glu Thr Thr Tyr Arg Thr Pro Gln Thr  
 325 330 335  
 Gly Arg His Asp Pro Cys Val Ala Ile Arg Ala Val Pro Val Val Glu  
 340 345 350  
 Ala Met Ile Asn Leu Val Leu Ala Asp Leu Val Leu Tyr Gln Arg Cys  
 355 360 365  
 Ser Lys Leu Ser Cys Gln Arg Gln  
 370 375

&lt;210&gt;1113

&lt;211&gt;184

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1113

Trp Lys Leu Glu Leu Arg Asn Val Met Thr Ile Ile Leu Cys Gly Leu  
 1 5 10 15  
 Pro Thr Ser Gly Lys Ser Ser Leu Gly Lys Ala Leu Ala Lys Phe Leu  
 20 25 30  
 Asn Leu Pro Phe Tyr Asp Leu Asp Asp Leu Ile Val Ser Asn Tyr Ser  
 35 40 45  
 Ser Ala Leu Tyr Ser Ser Ser Ala Glu Ile Tyr Lys Ala Tyr Gly Asp  
 50 55 60  
 Gln Lys Phe Ser Glu Cys Glu Ala Arg Ile Leu Glu Thr Leu Pro Pro  
 65 70 75 80  
 Glu Asp Ala Leu Ile Ser Leu Gly Gly Gly Thr Leu Met Tyr Glu Ala  
 85 90 95  
 Ser Tyr Arg Ala Ile Gln Thr Arg Gly Ala Leu Val Phe Leu Ser Val  
 100 105 110  
 Glu Leu Pro Leu Ile Tyr Glu Arg Leu Glu Lys Arg Gly Leu Pro Glu  
 115 120 125  
 Arg Leu Lys Glu Ala Met Lys Thr Lys Pro Leu Ser Glu Ile Leu Thr  
 130 135 140  
 Glu Arg Ile Asp Arg Met Lys Glu Ile Ala Asp Tyr Ile Phe Pro Val  
 145 150 155 160  
 Asp His Val Asp His Ser Ser Lys Ser Ser Leu Glu Gln Ala Ser Gln  
 165 170 175  
 Asp Leu Ile Thr Leu Leu Lys Ser  
 180

&lt;210&gt;1114

&lt;211&gt;449

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1114

Val Cys Phe Thr Met Leu Thr Tyr Lys Val Ser Pro Ser Ser Val Tyr  
 1 5 10 15  
 Gly Asn Ala Phe Ile Pro Ser Ser Lys Ser His Thr Leu Arg Ala Ile  
 20 25 30  
 Leu Trp Ala Ser Val Ala Glu Gly Lys Ser Thr Ile Tyr Asn Tyr Leu  
 35 40 45  
 Asp Ser Pro Asp Thr Glu Ala Met Ile Cys Ala Cys Lys Gln Met Gly  
 50 55 60  
 Ala Ser Ile Lys Lys Phe Pro Gln Ile Leu Glu Ile Val Gly Asn Pro  
 65 70 75 80  
 Leu Ala Ile Phe Pro Lys Tyr Thr Leu Ile Asp Ala Gly Asn Ser Gly  
 85 90 95  
 Ile Val Leu Arg Phe Met Thr Ala Leu Ala Cys Val Phe Ser Lys Glu  
 100 105 110  
 Ile Thr Val Thr Gly Ser Ser Gln Leu Gln Arg Arg Pro Met Ala Pro  
 115 120 125

Leu Leu Gln Ala Leu Arg Asn Phe Gly Ala Ser Phe His Phe Ser Ser  
 130 135 140  
 Asp Lys Ser Val Leu Pro Phe Thr Met Ser Gly Pro Leu Arg Ser Ala  
 145 150 155 160  
 Tyr Ser Asp Val Glu Gly Ser Asp Ser Gln Phe Ala Ser Ala Leu Ala  
 165 170 175  
 Val Ala Cys Ser Leu Ala Glu Gly Pro Cys Ser Phe Thr Ile Ile Glu  
 180 185 190  
 Pro Lys Glu Arg Pro Trp Phe Asp Leu Ser Leu Trp Trp Leu Glu Lys  
 195 200 205  
 Leu His Leu Pro Tyr Ser Cys Ser Asp Thr Thr Tyr Ser Phe Pro Gly  
 210 215 220  
 Ser Ser His Pro Gln Gly Phe Ser Tyr His Val Thr Gly Asp Phe Ser  
 225 230 235 240  
 Ser Ala Ala Phe Ile Ala Ala Ala Ala Leu Leu Ser Lys Ser Leu Gln  
 245 250 255  
 Pro Ile Arg Leu Arg Asn Leu Asp Ile Leu Asp Ile Gln Gly Asp Lys  
 260 265 270  
 Ile Phe Phe Ser Leu Met Gln Asn Leu Gly Ala Ser Ile Gln Tyr Asp  
 275 280 285  
 Asn Glu Glu Ile Leu Val Phe Pro Ser Ser Phe Ser Gly Gly Ser Ile  
 290 295 300  
 Asp Met Asp Gly Cys Ile Asp Ala Leu Pro Ile Leu Thr Val Leu Cys  
 305 310 315 320  
 Cys Phe Ala Asp Ser Pro Ser His Leu Tyr Asn Ala Arg Ser Ser Lys  
 325 330 335  
 Asp Lys Glu Ser Asp Arg Ile Leu Ala Ile Thr Glu Glu Leu Gln Lys  
 340 345 350  
 Met Gly Ala Cys Ile Gln Pro Thr His Asp Gly Leu Leu Val Asn Pro  
 355 360 365  
 Ser Pro Leu Tyr Gly Ala Val Leu Asp Ser His Asp Asp His Arg Ile  
 370 375 380  
 Ala Met Ala Leu Thr Ile Ala Ala Leu Tyr Ala Ser Gly Asp Ser Arg  
 385 390 395 400  
 Ile His Asn Thr Ala Cys Val Arg Lys Thr Phe Pro Asn Phe Val Gln  
 405 410 415  
 Thr Leu Asn Ile Met Glu Ala Arg Ile Glu Glu Cys His Asp Asn Tyr  
 420 425 430  
 Ser Met Trp Ser Thr His Lys Arg Lys Val Phe Ala Arg Glu Ser Phe  
 435 440 445  
 Gly

&lt;210&gt;1115

&lt;211&gt;96

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1115

Arg Cys Glu Gly Glu Ser Ala Lys Gln Gln Arg Thr Val Arg Met Gly  
 1 5 10 15  
 Arg Ala Ser Ile Gln Pro Ser Ile Ser Ile Glu Pro Pro Glu Asn Asp  
 20 25 30  
 Glu Gly Asn Thr Lys Ile Ser Ser Leu Ser Tyr Cys Ile Glu Ala Pro  
 35 40 45  
 Lys Phe Cys Met Arg Glu Lys Lys Ile Leu Ser Pro Trp Ile Ser Lys  
 50 55 60  
 Met Ser Lys Leu Arg Arg Ile Gly Trp Ser Asp Phe Glu Ser Arg  
 65 70 75 80  
 Ala Ala Ala Ala Met Lys Ala Ala Leu Leu Lys Ser Pro Val Thr Trp  
 85 90 95

&lt;210&gt;1116

&lt;211&gt;283

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1116

Arg Pro Ser Gln Ser Leu Phe Leu Arg Thr Trp Ser Phe Ser Ser Ser  
 1 5 10 15  
 Phe Arg Glu His Thr Val Cys Ala Ala Pro Leu Leu Tyr Pro Arg Arg  
 20 25 30  
 Arg Ser Pro Asp Tyr Leu Phe Ser Pro Thr Gly Cys Pro Met Ser Thr  
 35 40 45  
 Thr Thr Val Lys His Phe Ile His Thr Ala Ser Arg Trp Glu Pro Val  
 50 55 60  
 Leu Lys Glu Ile Val Ala Ser Asn Tyr Trp His Ala Gln Trp Ile Asn  
 65 70 75 80  
 Thr Leu Ser Phe Leu Glu Asn Ser Gly Ala Lys Lys Ile Ser Ala Ser  
 85 90 95  
 Glu His Pro Thr Glu Val Lys Glu Glu Val Leu Lys His Ala Ala Glu  
 100 105 110  
 Glu Phe Arg His Gly His Tyr Leu Lys Thr Gln Ile Ser Arg Ile Ser  
 115 120 125  
 Glu Thr Ser Leu Pro Asp Tyr Thr Ser Lys Asn Leu Leu Gly Gly Leu  
 130 135 140  
 Leu Thr Lys Tyr Tyr Leu His Leu Leu Asp Leu Arg Thr Cys Arg Val  
 145 150 155 160  
 Leu Glu Asn Glu Tyr Ser Leu Ser Gly Gln Thr Leu Lys Thr Ala Ala  
 165 170 175  
 Tyr Ile Leu Val Thr Tyr Ala Ile Glu Leu Arg Ala Ser Glu Leu Tyr  
 180 185 190  
 Pro Leu Tyr His Asp Ile Leu Lys Glu Ala Gln Ser Lys Ile Thr Val  
 195 200 205  
 Lys Ser Ile Ile Leu Glu Glu Gln Gly His Leu Gln Glu Met Glu Arg  
 210 215 220  
 Glu Leu Lys Asp Leu Pro His Gly Glu Gly Thr Leu Arg Leu Cys Leu  
 225 230 235 240  
 Pro Ile Arg Arg Gly Ala Leu Leu Ala Val Cys Arg Glu Ile Arg Thr  
 245 250 255  
 Asn Asp Leu Arg Ser Phe Leu Asp Phe Tyr Lys Val Leu Glu Phe Phe  
 260 265 270  
 Leu Asp Asp Lys Ser Glu Val Arg Gln Ile Thr  
 275 280

&lt;210&gt;1117

&lt;211&gt;505

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1117

Leu Val Met Phe Leu Asp Phe Ser Glu Pro Ser Ile Ser Arg Lys Tyr  
 1 5 10 15  
 Gln Ser His Leu Phe Asn Gly Arg Ser Asn Ala Leu Thr Lys Pro Gln  
 20 25 30  
 Tyr Leu Arg Tyr Gly Gly Lys Trp Val Ser Arg Gly Arg Arg Ala Leu  
 35 40 45  
 Ala Asn Ser Arg Asn Gln Ala Ser Tyr Asn Arg Asp Ser Cys Gln Gly  
 50 55 60  
 Lys Arg Asn His Lys Asp Asn His Lys Leu Leu Cys Arg Thr Met Glu  
 65 70 75 80  
 Gly Ser Met Asp Lys Gln Ser Ser Gly Asn Ser Gly Cys Ile Trp His  
 85 90 95  
 Pro Phe Thr Gln Ser Ala Leu Asp Ser Thr Pro Ile Lys Ile Val Arg  
 100 105 110  
 Gly Glu Gly Ala Tyr Leu Tyr Ala Glu Ser Gly Thr Arg Tyr Leu Asp  
 115 120 125  
 Ala Ile Ser Ser Trp Trp Cys Asn Leu His Gly His Gly His Pro Tyr  
 130 135 140  
 Ile Thr Lys Lys Leu Cys Glu Gln Ala Gln Lys Leu Glu His Val Ile  
 145 150 155 160  
 Phe Ala Asn Phe Thr His Glu Pro Ala Leu Glu Leu Val Ser Lys Leu  
 165 170 175  
 Ala Pro Leu Leu Pro Glu Gly Leu Glu Arg Phe Phe Phe Ser Asp Asn



180 185 190  
 Gly Ser Thr Ser Ile Glu Ile Ala Met Lys Ile Ala Val Gln Tyr Tyr  
 195 200 205  
 Tyr Asn Gln Asn Lys Ala Lys Ser His Phe Val Gly Leu Ser Asn Ala  
 210 215 220  
 Tyr His Gly Asp Thr Phe Gly Ala Met Ser Ile Ala Gly Thr Ser Pro  
 225 230 235 240  
 Thr Thr Val Pro Phe His Asp Leu Phe Leu Pro Ser Ser Thr Ile Ala  
 245 250 255  
 Ala Pro Tyr Tyr Gly Lys Glu Glu Leu Ala Ile Ala Gln Ala Lys Thr  
 260 265 270  
 Val Phe Ser Glu Ser Asn Ile Ala Ala Phe Ile Tyr Glu Pro Leu Leu  
 275 280 285  
 Gln Gly Ala Gly Gly Met Leu Met Tyr Asn Pro Glu Gly Leu Lys Glu  
 290 295 300  
 Ile Leu Lys Leu Ala Lys His Tyr Gly Val Leu Cys Ile Ala Asp Glu  
 305 310 315 320  
 Ile Leu Thr Gly Phe Gly Arg Thr Gly Pro Leu Phe Ala Ser Glu Phe  
 325 330 335  
 Thr Asp Ile Pro Pro Asp Ile Ile Cys Leu Ser Lys Gly Leu Thr Gly  
 340 345 350  
 Gly Tyr Leu Pro Leu Ala Leu Thr Val Thr Thr Lys Glu Ile His Asp  
 355 360 365  
 Ala Phe Val Ser Gln Asp Arg Met Lys Ala Leu Leu His Gly His Thr  
 370 375 380  
 Phe Thr Gly Asn Pro Leu Gly Cys Ser Ala Ala Leu Ala Ser Leu Asp  
 385 390 395 400  
 Leu Thr Leu Ser Pro Glu Cys Leu Gln Gln Arg Gln Met Ile Glu Arg  
 405 410 415  
 Cys His Gln Glu Phe Gln Glu Ala His Gly Ser Leu Trp Gln Arg Cys  
 420 425 430  
 Glu Val Leu Gly Thr Val Leu Ala Leu Asp Tyr Pro Ala Glu Ala Thr  
 435 440 445  
 Gly Tyr Phe Ser Gln Tyr Arg Asp His Leu Asn Arg Phe Phe Leu Glu  
 450 455 460  
 Arg Gly Val Leu Leu Arg Pro Leu Gly Asn Thr Leu Tyr Val Leu Pro  
 465 470 475 480  
 Pro Tyr Cys Ile Gln Glu Glu Asp Leu Arg Ile Ile Tyr Ser His Leu  
 485 490 495  
 Gln Asp Ala Leu Cys Leu Gln Pro Gln  
 500 505

&lt;210&gt;1118

&lt;211&gt;219

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1118

Met Gln Arg Ile Ile Ile Val Gly Ile Asp Thr Gly Val Gly Lys Thr  
 1 5 10 15  
 Ile Val Ser Ala Ile Leu Ala Arg Ala Leu Asn Ala Glu Tyr Trp Lys  
 20 25 30  
 Pro Ile Gln Ala Gly Asn Leu Glu Asn Ser Asp Ser Asn Ile Val His  
 35 40 45  
 Glu Leu Ser Gly Ala Tyr Cys His Pro Glu Ala Tyr Arg Leu His Lys  
 50 55 60  
 Pro Leu Ser Pro His Lys Ala Ala Gln Ile Asp Asn Val Ser Ile Glu  
 65 70 75 80  
 Glu Ser His Ile Cys Ala Pro Lys Thr Thr Ser Asn Leu Ile Ile Glu  
 85 90 95  
 Thr Ser Gly Gly Phe Leu Ser Pro Cys Thr Ser Lys Arg Leu Gln Gly  
 100 105 110  
 Asp Val Phe Ser Ser Trp Ser Cys Ser Trp Ile Leu Val Ser Gln Ala  
 115 120 125  
 Tyr Leu Gly Ser Ile Asn His Thr Cys Leu Thr Val Glu Ala Met Arg  
 130 135 140

Ser Arg Asn Leu Asn Ile Leu Gly Met Val Val Asn Gly Tyr Pro Glu  
 145 150 155 160  
 Asp Glu Glu His Trp Leu Thr Gln Glu Ile Lys Leu Pro Ile Ile Gly  
 165 170 175  
 Thr Leu Ala Lys Glu Lys Glu Ile Thr Lys Thr Ile Ile Ser Cys Tyr  
 180 185 190  
 Ala Glu Gln Trp Lys Glu Val Trp Thr Ser Asn His Gln Gly Ile Gln  
 195 200 205  
 Gly Val Ser Gly Thr Pro Ser Leu Asn Leu His  
 210 215  
 <210>1119  
 <211>383  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1119  
 Pro Met Leu Cys Gln Gln Phe Leu Ile Glu Ala Leu Ala Arg Arg Lys  
 1 5 10 15  
 Ser Lys His Thr Tyr Arg Ser Leu Ser Leu Asn Ser His Leu Ile Asp  
 20 25 30  
 Phe Thr Ser Asn Asp Tyr Leu Gly Phe Ala Ser Ser Pro Glu Leu Arg  
 35 40 45  
 Lys Glu Tyr Ile Thr Lys Leu His Ala Ile Glu Ser Leu Gly Ala Thr  
 50 55 60  
 Gly Ser Arg Leu Leu Thr Gly His Ser Gln Leu Cys Gln Arg Ile Glu  
 65 70 75 80  
 Glu Gln Leu Ala Ala Tyr His Asn Phe Glu Ser Cys Leu Ile Phe Asn  
 85 90 95  
 Thr Gly Tyr Thr Ala Asn Leu Gly Leu Leu Tyr Ala Leu Ala Thr Asp  
 100 105 110  
 Gln Asp Arg Ile Leu His Asp Leu Tyr Ile His Ala Ser Ile Tyr Asp  
 115 120 125  
 Gly Ile Arg Leu Ser Lys Ala Gln Ser Phe Pro Phe Asn His Asn Asp  
 130 135 140  
 Leu Asn His Leu Glu Lys Arg Leu Ala Ser Ser His Leu Gly Arg Thr  
 145 150 155 160  
 Phe Val Cys Val Glu Ser Val Tyr Ser Leu His Gly Ser Val Ala Pro  
 165 170 175  
 Leu Gln Ala Ile Ser Glu Leu Cys Glu Arg Tyr Ser Ala Tyr Leu Ile  
 180 185 190  
 Val Asp Glu Ala His Ala Val Gly Val Phe Gly Asp Gln Gly Glu Gly  
 195 200 205  
 Leu Val Ser Ala Leu Gly Leu Val Asp Lys Val Leu Ala Thr Val Tyr  
 210 215 220  
 Thr Phe Gly Lys Ala Leu Gly Thr His Gly Ala Ala Ile Ala Gly Ser  
 225 230 235 240  
 Ser Ile Leu Lys Asp Tyr Leu Ile Asn Phe Cys Arg Pro Phe Ile Tyr  
 245 250 255  
 Thr Thr Ala Gln Pro Pro His Ala Leu Thr Ala Ile Glu Leu Ala Tyr  
 260 265 270  
 Glu His Asn Gln Arg Ala Phe Asn Gln Arg Glu His Leu Ser Ala Leu  
 275 280 285  
 Ile His His Phe Arg Glu Lys Ala Gln Asn Leu Gly Leu Gln Leu Met  
 290 295 300  
 Lys Asp Asn Thr Thr Thr Pro Ile Gln Ser Ile Cys Val Ser Gly Ser  
 305 310 315 320  
 His Arg Ala Arg Gln Ala Ala Leu Gln Ile Gln Asn Ser Gly Tyr Asp  
 325 330 335  
 Val Arg Pro Ile Val Ser Pro Thr Val Lys Gln Arg Glu Glu Leu Leu  
 340 345 350  
 Arg Ile Cys Leu His Ala Phe Asn Thr Lys Asn Glu Ile Asp His Leu  
 355 360 365  
 Leu His Thr Leu Glu Gln Ile Phe Leu Cys Asn Val Ser Ser Leu  
 370 375 380  
 <210>1120

&lt;211&gt;334

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1120

Ala Lys His Met Arg Glu Glu Thr Val Ser Trp Ser Leu Glu Asp Ile  
 1 5 10 15  
 Arg Glu Ile Tyr His Thr Pro Val Phe Glu Leu Ile His Lys Ala Asn  
 20 25 30  
 Ala Ile Leu Arg Ser Asn Phe Leu His Ser Glu Leu Gln Thr Cys Tyr  
 35 40 45  
 Leu Ile Ser Ile Lys Thr Gly Gly Cys Val Glu Asp Cys Ala Tyr Cys  
 50 55 60  
 Ala Gln Ser Ser Arg Tyr His Thr His Val Thr Pro Glu Pro Met Met  
 65 70 75 80  
 Lys Ile Val Asp Val Val Glu Arg Ala Lys Arg Ala Val Glu Leu Gly  
 85 90 95  
 Ala Thr Arg Val Cys Leu Gly Ala Ala Trp Arg Asn Ala Lys Asp Asp  
 100 105 110  
 Arg Tyr Phe Asp Arg Val Leu Ala Met Val Lys Ser Ile Thr Asp Leu  
 115 120 125  
 Gly Ala Glu Val Cys Cys Ala Leu Gly Met Leu Ser Glu Glu Gln Ala  
 130 135 140  
 Lys Lys Leu Tyr Asp Ala Gly Leu Tyr Ala Tyr Asn His Asn Leu Asp  
 145 150 155 160  
 Ser Ser Pro Glu Phe Tyr Glu Thr Ile Ile Thr Thr Arg Ser Tyr Glu  
 165 170 175  
 Asp Arg Leu Asn Thr Leu Asp Val Val Asn Lys Ser Gly Ile Ser Thr  
 180 185 190  
 Cys Cys Gly Gly Ile Val Gly Met Gly Glu Ser Glu Glu Asp Arg Ile  
 195 200 205  
 Lys Leu Leu His Val Leu Ala Thr Arg Asp His Ile Pro Glu Ser Val  
 210 215 220  
 Pro Val Asn Leu Leu Trp Pro Ile Asp Gly Thr Pro Leu Gln Asp Gln  
 225 230 235 240  
 Pro Pro Ile Ser Phe Trp Glu Val Leu Arg Thr Ile Ala Thr Ala Arg  
 245 250 255  
 Val Val Phe Pro Arg Ser Met Val Arg Leu Ala Ala Gly Arg Ala Phe  
 260 265 270  
 Leu Thr Val Glu Gln Gln Thr Leu Cys Phe Leu Ala Gly Ala Asn Ser  
 275 280 285  
 Ile Phe Tyr Gly Asp Lys Leu Leu Thr Val Glu Asn Asn Asp Ile Asp  
 290 295 300  
 Glu Asp Ala Glu Met Ile Lys Leu Leu Gly Leu Ile Pro Arg Pro Ser  
 305 310 315 320  
 Phe Gly Ile Glu Arg Gly Asn Pro Cys Tyr Ala Asn Asn Ser  
 325 330

&lt;210&gt;1121

&lt;211&gt;259

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1121

Ser Glu Phe Met Val Ser Thr Pro Phe Leu Thr Val Phe Ser Met Glu  
 1 5 10 15  
 Lys Leu Leu Ser Lys Ile Phe Leu Asp Tyr Leu Glu Ala Phe Gly Leu  
 20 25 30  
 Leu Ser Asp Phe Leu Asp His Gln Ala Val Ile Lys Phe Phe Glu Leu  
 35 40 45  
 Glu Thr His Phe Ser Tyr Tyr Pro Val Ser Gly Phe Val Ala Pro His  
 50 55 60  
 Gln Tyr Leu Ser Leu Leu Gln Asp Arg Tyr Phe Pro Ile Ala Ser Val  
 65 70 75 80  
 Met Arg Thr Leu Asp Lys Asp Asn Phe Ser Leu Thr Pro Asp Leu Ile  
 85 90 95  
 His Asp Leu Leu Gly His Val Pro Trp Leu Leu His Pro Ser Phe Ser

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |     |
| Glu | Phe | Phe | Ile | Asn | Met | Gly | Arg | Leu | Phe | Thr | Lys | Val | Ile | Glu | Lys |  |     |
|     |     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |  |     |
| Val | Gln | Ala | Leu | Pro | Ser | Lys | Lys | Gln | Arg | Ile | Gln | Thr | Leu | Gln | Ser |  |     |
|     |     |     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |  |     |
| Asn | Leu | Ile | Ala | Ile | Val | Arg | Cys | Phe | Trp | Phe | Thr | Val | Glu | Ser | Gly |  |     |
|     |     |     | 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |  | 160 |
| Leu | Ile | Glu | Asn | His | Glu | Gly | Arg | Lys | Ala | Tyr | Gly | Ala | Val | Leu | Ile |  |     |
|     |     |     | 165 |     |     |     |     |     |     |     |     |     | 170 |     |     |  | 175 |
| Ser | Ser | Pro | Gln | Glu | Leu | Gly | His | Ala | Phe | Ile | Asp | Asn | Val | Arg | Val |  |     |
|     |     |     | 180 |     |     |     |     |     |     |     |     |     | 185 |     |     |  | 190 |
| Leu | Pro | Leu | Glu | Leu | Asp | Gln | Ile | Arg | Leu | Pro | Phe | Asn | Thr | Ser |     |  |     |
|     |     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |  |     |
| Thr | Pro | Gln | Glu | Thr | Leu | Phe | Ser | Ile | Arg | His | Phe | Asp | Glu | Leu | Val |  |     |
|     |     |     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |  |     |
| Glu | Leu | Thr | Ser | Lys | Leu | Glu | Trp | Met | Leu | Asp | Gln | Gly | Leu | Leu | Glu |  |     |
|     |     |     | 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |  | 240 |
| Ser | Ile | Pro | Leu | Tyr | Asn | Gln | Glu | Lys | Tyr | Leu | Ser | Gly | Phe | Glu | Val |  |     |
|     |     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |  |     |

Leu Cys Gln

&lt;210&gt;1122

&lt;211&gt;264

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1122

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|
| Met | Gly | Ser | Ser | Met | His | Val | Gly | Val | Ile | Gly | Cys | Ser | Gly | Arg | Thr |  |     |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |  |     |
| Gly | Lys | Val | Ile | Val | Ser | Ala | Leu | Glu | Gln | Ser | Ser | Glu | Tyr | Thr | Leu |  |     |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |     |
| Gly | Pro | Gly | Phe | Ser | Arg | Ser | Ser | Ala | Leu | Thr | Leu | Phe | Gln | Val | Ile |  |     |
|     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |  |     |
| Ala | His | Asn | Asp | Val | Leu | Val | Asp | Phe | Ser | His | Pro | Leu | Leu | Thr | Lys |  |     |
|     |     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |  |     |
| Glu | Val | Val | Ala | His | Leu | Leu | Ile | Ser | Pro | Lys | Pro | Leu | Ile | Ile | Gly |  |     |
|     |     |     | 65  |     |     | 70  |     |     |     | 75  |     |     |     | 80  |     |  |     |
| Thr | Thr | Gly | Phe | Pro | Gly | Lys | Cys | Lys | Glu | Ala | His | Asp | Ser | Leu | Glu |  |     |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |  |     |
| Glu | Leu | Thr | His | Ile | Val | Pro | Val | Val | Val | Cys | Pro | Asn | Ala | Ser | Leu |  |     |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |     |
| Gly | Ala | Tyr | Ile | His | Lys | Arg | Leu | Val | Met | Leu | Leu | Ser | Gln | Leu | Cys |  |     |
|     |     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |  |     |
| Asn | Pro | Gln | Phe | Asp | Ile | Arg | Ile | Arg | Glu | Thr | His | His | Arg | Tyr | Lys |  |     |
|     |     |     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |  |     |
| Lys | Asp | Ser | Leu | Ser | Gly | Thr | Ala | Gln | Asp | Leu | Leu | Asp | Thr | Ile | Gln |  |     |
|     |     |     | 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |  | 160 |
| Gln | Val | Lys | Gln | Glu | Asp | Trp | Gly | Glu | Glu | Tyr | Glu | Val | Gly | Gln | Arg |  |     |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |  |     |
| Asp | Ser | Ser | Lys | Lys | Thr | Ile | Glu | Val | Gln | Ser | Ser | Arg | Val | Gly | Asp |  |     |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |     |
| Ile | Pro | Gly | Glu | His | Glu | Val | Ala | Phe | Ile | Ser | Ser | Gly | Glu | Gln | Ile |  |     |
|     |     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |  |     |
| Leu | Val | Arg | His | Thr | Val | Phe | Ser | Arg | Asn | Val | Phe | Gly | Arg | Gly | Ile |  |     |
|     |     |     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |  |     |
| Leu | Ser | Ile | Leu | Asp | Trp | Leu | Lys | Thr | Leu | Asn | Pro | Gln | Pro | Gly | Leu |  |     |
|     |     |     | 225 |     |     |     |     | 230 |     |     |     | 235 |     |     |     |  | 240 |
| Tyr | Ser | Leu | Gly | Asp | Thr | Leu | Glu | Leu | Val | Leu | Arg | Asn | Glu | His | Cys |  |     |
|     |     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |  |     |

Leu Leu Lys Lys Thr Thr Asp His

&lt;210&gt;1123

&lt;211&gt;295

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1123

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Ile Trp Ala Ile Val Trp Arg Cys Leu Tyr Leu Ala Gly Ala Ile Gly
 1           5           10           15
Pro Met Pro Glu Met Val Arg Asp Leu Pro Ile Arg Lys Ile Glu Glu
      20           25           30
Val Gln Ser Asp Ile Val Val Ser Phe Leu Pro Ser Ser Ala Glu Ser
      35           40           45
Met Glu Ala Tyr Cys Leu Ser Gln Gly Lys Val Val Phe Ser Asn Ala
      50           55           60
Ser Thr Tyr Arg Met His Ser Ser Val Pro Ile Ile Ile Pro Glu Val
      65           70           75           80
Asn Ser Asp His Phe Gln Leu Leu Glu Glu Gln Pro Tyr Pro Gly Lys
      85           90           95
Ile Ile Thr Ser Pro Asn Cys Cys Val Ser Gly Ile Thr Leu Ala Leu
      100           105           110
Ala Pro Leu Arg Lys Phe Ser Leu Asp His Val His Ile Val Thr Leu
      115           120           125
Gln Ser Ala Ser Gly Ala Gly Tyr Pro Gly Val Pro Ser Leu Asp Leu
      130           135           140
Leu Ala Asn Thr Val Pro His Ile Val Gly Glu Glu Glu Lys Ile Leu
      145           150           155           160
Arg Glu Thr Val Lys Ile Leu Gly Ser Ser Lys Gln Pro Leu Pro Cys
      165           170           175
Lys Leu Ser Val Thr Val His Arg Val Pro Val Ala Tyr Gly His Thr
      180           185           190
Leu Ser Leu His Val Thr Phe Ser Lys Asp Val Asp Leu Asp Glu Ile
      195           200           205
Leu Tyr Ser Tyr Gln Glu Lys Asn Lys Glu Phe Pro Asn Thr Tyr Gln
      210           215           220
Leu Tyr Asp Asn Pro Trp Ser Pro Gln Ala Arg Lys His Leu Ser His
      225           230           235           240
Asp Asp Met Arg Val His Leu Gly Pro Ile Thr Tyr Gly Gly Asp Phe
      245           250           255
Arg Thr Ile Lys Met Asn Val Leu Ile His Asn Leu Val Arg Gly Ala
      260           265           270
Ala Gly Thr Leu Leu Ala Ser Met Glu Asn Tyr Phe Phe Asp Tyr Leu
      275           280           285
Lys Arg Glu Met Cys Leu Arg
      290           295

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&lt;210&gt;1124

&lt;211&gt;441

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1124

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Asn Val Ser Lys Ile Val Tyr Lys Phe Gly Gly Thr Ser Leu Ala Thr
 1           5           10           15
Ala Glu Asn Ile Cys Leu Val Cys Asp Ile Ile Cys Lys Asp Lys Pro
      20           25           30
Ser Phe Val Val Val Ser Ala Ile Ala Gly Val Thr Asp Leu Leu Val
      35           40           45
Asp Phe Cys Ser Ser Ser Leu Arg Glu Arg Glu Glu Val Leu Arg Lys
      50           55           60
Ile Glu Gly Lys His Glu Glu Ile Val Lys Asn Leu Ala Ile Pro Phe
      65           70           75           80
Pro Val Ser Thr Trp Thr Ser Arg Leu Leu Pro Tyr Leu Gln His Leu
      85           90           95
Glu Ile Ser Asp Leu Asp Phe Ala Arg Ile Leu Ser Leu Gly Glu Asp
      100           105           110
Ile Ser Ala Ser Leu Val Arg Ala Val Cys Ser Thr Arg Gly Trp Asp
      115           120           125
Leu Gly Phe Leu Glu Ala Arg Ser Val Ile Leu Thr Asp Asp Ser Tyr
      130           135           140
Arg Arg Ala Ser Pro Asn Leu Asp Leu Met Lys Ala His Trp His Gln
      145           150           155           160

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Leu Glu Leu Asn Gln Pro Ser Tyr Ile Ile Gln Gly Phe Ile Gly Ser  
 165 170  
 Asn Gly Leu Gly Gln Thr Val Leu Leu Gly Arg Gly Gly Ser Asp Tyr  
 180 185 190  
 Ser Ala Thr Leu Ile Ala Glu Leu Ala Arg Ala Thr Glu Val Arg Ile  
 195 200 205  
 Tyr Thr Asp Val Asn Gly Ile Tyr Thr Met Asp Pro Lys Val Ile Ser  
 210 215 220  
 Asp Ala Gln Arg Ile Pro Gln Leu Ser Phe Glu Glu Met Gln Asn Leu  
 225 230 235 240  
 Ala Ser Phe Gly Ala Lys Val Leu Tyr Pro Pro Met Leu Phe Pro Cys  
 245 250 255  
 Met Arg Ala Gly Ile Pro Ile Phe Val Thr Ser Thr Phe Asp Pro Glu  
 260 265 270  
 Lys Gly Gly Thr Trp Val Tyr Ala Val Asp Lys Ser Val Ser Tyr Glu  
 275 280 285  
 Pro Arg Ile Lys Ala Leu Ser Leu Ser Gln Tyr Gln Ser Phe Cys Ser  
 290 295 300  
 Val Asp Tyr Thr Val Leu Gly Cys Gly Gly Leu Glu Glu Ile Leu Gly  
 305 310 315 320  
 Ile Leu Glu Ser His Gly Ile Asp Pro Glu Leu Met Ile Ala Gln Asn  
 325 330 335  
 Asn Val Val Gly Phe Val Met Asp Asp Ile Ile Ser Gln Glu Ala  
 340 345 350  
 Gln Gln His Leu Val Asp Val Leu Ser Leu Ser Ser Val Thr Arg Leu  
 355 360 365  
 His His Ser Val Ala Leu Ile Thr Met Ile Gly Asp Asn Leu Ser Ser  
 370 375 380  
 Pro Lys Val Val Ser Thr Ile Thr Glu Lys Leu Arg Gly Phe Gln Gly  
 385 390 395 400  
 Pro Val Phe Cys Phe Cys Gln Ser Ser Met Ala Leu Ser Phe Val Val  
 405 410 415  
 Ala Ser Glu Leu Ala Gln Gly Ile Ile Glu Glu Leu His Asn Asp Tyr  
 420 425 430  
 Val Lys Gln Lys Ala Ile Val Ala Thr  
 435 440

&lt;210&gt;1125

&lt;211&gt;271

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1125

Lys Ser Tyr Ser Arg His Val Gly Arg Ile Met His Leu Leu Thr Ala  
 1 5 10 15  
 Thr Val Thr Pro Phe Phe Pro Asn Gly Thr Ile Asp Phe Ala Ser Leu  
 20 25 30  
 Glu Arg Leu Leu Ser Phe Gln Asp Ala Val Gly Asn Gly Val Val Leu  
 35 40 45  
 Leu Gly Ser Thr Gly Glu Gly Leu Ser Leu Thr Lys Lys Glu Lys Gln  
 50 55 60  
 Ala Leu Ile Cys Phe Ala Cys Asp Leu Gln Leu Lys Val Pro Leu Phe  
 65 70 75 80  
 Val Gly Thr Ser Gly Thr Leu Leu Glu Glu Val Leu Asp Trp Ile His  
 85 90 95  
 Phe Cys Asn Asp Leu Pro Ile Ser Gly Phe Leu Met Thr Thr Pro Ile  
 100 105 110  
 Tyr Thr Lys Pro Lys Leu Cys Gly Gln Ile Leu Trp Phe Glu Ala Val  
 115 120 125  
 Leu Asn Ala Ala Lys His Pro Ala Ile Leu Tyr Asn Ile Pro Ser Arg  
 130 135 140  
 Ala Ala Thr Pro Leu Tyr Leu Asp Thr Val Lys Ala Leu Ala His His  
 145 150 155 160  
 Pro Gln Phe Leu Gly Ile Lys Asp Ser Gly Gly Ser Val Glu Gln Phe  
 165 170 175  
 Gln Ser Tyr Lys Ser Ile Ala Pro His Ile Gln Leu Tyr Cys Gly Asp

180 185 190  
 Asp Val Phe Trp Ser Glu Met Ala Ala Cys Gly Ala His Gly Leu Ile  
 195 200 205  
 Ser Val Leu Ser Asn Ala Trp Pro Glu Glu Ala Arg Glu Tyr Val Leu  
 210 215 220  
 Asn Pro Gln Glu Gln Asp Tyr Arg Ser Leu Trp Met Glu Thr Cys Arg  
 225 230 235 240  
 Trp Val Tyr Thr Thr Thr Asn Pro Ile Gly Ile Lys Ala Ile Leu Ala  
 245 250 255  
 Tyr Lys Lys Ala Ile Thr His Ala His Cys Ala Cys Pro Cys Leu  
 260 265 270

&lt;210&gt;1126

&lt;211&gt;256

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1126

Phe Phe Ile Gln Lys Met Lys Tyr Asn Ser Arg Glu Lys Ile Lys Ser  
 1 5 10 15  
 Ala Leu Arg Ile Cys Ser Ser Tyr Cys Ile Thr Val Phe Arg Asn Asn  
 20 25 30  
 Phe Ser Leu Ser Cys Tyr Asp Lys Ile Phe Tyr Ser Leu Ser Cys Tyr  
 35 40 45  
 Val Phe Asn Gly Pro Asn Ser Ile Gly Arg Cys Arg Ser Phe Cys Phe  
 50 55 60  
 Phe Arg Gly Lys Lys Thr Glu Val Glu Thr Lys Glu Val Lys Ile Lys  
 65 70 75 80  
 Asp Glu Ile Arg Pro Ser Leu Glu Gly Asn Asp Pro Val Lys Val Ala  
 85 90 95  
 Glu Ser Phe Pro Lys Arg Arg Ala Ala Leu Glu Ser Leu Ser Ser Gln  
 100 105 110  
 Ser Ser Ile Gly Asn Leu Cys Ala Ile Ser Asn Phe Leu Asp Ser Gln  
 115 120 125  
 Met Leu Ser Arg Asn Phe Ser Lys Glu Ile Trp Gly Ser Thr Ile Phe  
 130 135 140  
 Thr Arg Ser Lys Ser Thr Cys Asp Ala Glu Gly Ser Glu Pro Phe Arg  
 145 150 155 160  
 Tyr Thr Ala Cys Gly Tyr Leu Ala Gly Leu Arg Ser Lys Leu Ala Gly  
 165 170 175  
 Ser Tyr Glu Leu Gly Val Thr Ala Gly Leu Leu Gln Gly Arg Leu Lys  
 180 185 190  
 Asp Val Ser Asp Ser His Arg Thr Arg Ala Thr Ser Ser Ile Leu Ser  
 195 200 205  
 Val His Gly Ser Met Val Thr Arg Pro Leu Ser Cys Thr Lys Tyr Ile  
 210 215 220  
 Val Gly Lys Ala Arg Pro Leu Leu Phe Phe Phe Arg Leu Thr Ser Asp  
 225 230 235 240  
 Val Arg Arg Asp Leu Lys Lys Lys Phe Arg Leu Glu Phe Cys Lys Asp  
 245 250 255

&lt;210&gt;1127

&lt;211&gt;119

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1127

His Ile Leu Phe Tyr Ser Lys Phe Thr Tyr Arg Thr Pro Leu Arg Val  
 1 5 10 15  
 Thr Ser Pro Ser Gly Arg His Asp Phe Asn Ile Asp Met His Val Ala  
 20 25 30  
 Pro Lys Ile Gly Ala Val Leu Ser His Gly Thr Arg Glu Ala Lys Glu  
 35 40 45  
 Ile Pro Gly Ser Ser Lys Asp Tyr Ala Phe Phe Ser Leu Thr Ala Arg  
 50 55 60  
 Glu Ser Leu Met Ile Ser Glu Lys Leu Ala Met Thr Phe Gln Val Ser  
 65 70 75 80  
 Glu Val Ile Gln Asn Cys Tyr Ser Gln Cys Thr Lys Val Thr Lys Thr

35 90 95  
 Asn Leu Lys Glu Gln Tyr Arg His Leu Ser His Asn Thr Gly Phe Glu  
 100 105 110  
 Leu Ser Val Lys Ser Ala Phe  
 115  
 <210>1128  
 <211>870  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1128  
 Cys Lys Tyr Phe Tyr Leu Arg Ser Tyr Pro Pro Pro Gln His Ser Val  
 1 5 10 15  
 Gly Ser Ile Ser Ser Pro Ser Lys Leu Arg Val Leu Ala Ile Thr Phe  
 20 25 30  
 Leu Val Phe Gly Met Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr  
 35 40 45  
 Leu Gly Ile Pro Gly Leu Ser Ala Ala Ile Ser Phe Gly Leu Gly Ile  
 50 55 60  
 Gly Leu Ser Ala Leu Gly Val Leu Met Ile Ser Gly Leu Leu Cys  
 65 70 75 80  
 Leu Leu Val Lys Arg Glu Ile Pro Thr Val Arg Pro Glu Glu Ile Pro  
 85 90 95  
 Glu Gly Val Ser Leu Ala Pro Ser Glu Glu Pro Ala Leu Gln Ala Ala  
 100 105 110  
 Gln Lys Thr Leu Ala Gln Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr  
 115 120 125  
 Asp Ile Gln Glu Val Phe Ala Cys Leu Arg Lys Leu Lys Asp Ser Lys  
 130 135 140  
 Tyr Glu Ser Arg Ser Phe Leu Asn Asp Ala Lys Lys Glu Leu Arg Val  
 145 150 155 160  
 Phe Asp Phe Val Val Glu Asp Thr Leu Ser Glu Ile Phe Glu Leu Arg  
 165 170 175  
 Gln Ile Val Ala Gln Glu Gly Trp Asp Leu Asn Phe Leu Ile Asn Gly  
 180 185 190  
 Gly Arg Ser Leu Met Met Thr Ala Glu Ser Glu Ser Leu Asp Leu Phe  
 195 200 205  
 His Val Ser Lys Arg Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly  
 210 215 220  
 Glu Gly Leu Lys Lys Ser Ala Lys Glu Ile Val Ala Arg Leu Met Ser  
 225 230 235 240  
 Leu His Cys Glu Ile His Lys Val Ala Val Ala Phe Asp Arg Asn Ser  
 245 250 255  
 Tyr Ala Met Ala Glu Lys Ala Phe Ala Lys Ala Leu Gly Ala Leu Glu  
 260 265 270  
 Glu Ser Val Tyr Arg Ser Leu Thr Gln Ser Tyr Arg Asp Lys Phe Leu  
 275 280 285  
 Glu Ser Glu Arg Ala Lys Ile Pro Trp Asn Gly His Ile Thr Trp Leu  
 290 295 300  
 Arg Asp Asp Ala Lys Ser Gly Cys Ala Glu Lys Lys Leu Arg Asp Ala  
 305 310 315 320  
 Glu Glu Arg Trp Lys Lys Phe Arg Lys Ala Val Phe Trp Val Glu Glu  
 325 330 335  
 Asp Gly Gly Phe Asp Ile Asn Asn Leu Leu Gly Asp Trp Gly Thr Val  
 340 345 350  
 Leu Asp Pro Tyr Arg Gln Glu Arg Met Asp Glu Ile Thr Phe His Glu  
 355 360 365  
 Leu Tyr Glu Lys Thr Thr Phe Leu Lys Arg Leu His Arg Lys Cys Ala  
 370 375 380  
 Leu Ala Lys Thr Thr Phe Glu Lys Xaa Arg Ser Lys Lys Asn Leu Gln  
 385 390 395 400  
 Ala Val Xaa Glu Ala Asn Ala Arg Arg Leu Lys Tyr Val Arg Asp Trp  
 405 410 415  
 Tyr Asp Gln Xaa Phe Gln Lys Ala Gly Glu Arg Leu Glu Lys Leu His  
 420 425 430



Ala Leu Tyr Pro Glu Val Ser Val Ser Ile Arg Glu Asn Lys Ile Gln  
 435 440 445  
 Glu Thr Arg Ser Asn Leu Xaa Lys Ala Tyr Glu Ala Ile Glu Xaa Asn  
 450 455 460  
 Tyr Arg Cys Cys Val Arg Glu Gln Glu Asp Tyr Trp Lys Glu Glu Glu  
 465 470 475 480  
 Lys Arg Glu Ala Xaa Phe Arg Glu Arg Gly Asn Xaa Ile Leu Ser Pro  
 485 490 495  
 Glu Glu Leu Glu Xaa Ser Leu Glu Gln Phe Asp His Gly Leu Lys Asn  
 500 505 510  
 Phe Ser Glu Lys Leu Met Glu Leu Glu Gly His Ile Leu Lys Leu Gln  
 515 520 525  
 Lys Glu Ala Thr Ala Glu Val Glu Asn Lys Ile Leu Ser Asp Ala Glu  
 530 535 540  
 Ser Arg Leu Glu Ile Val Phe Glu Asp Val Lys Glu Met Pro Cys Arg  
 545 550 555 560  
 Ile Glu Glu Ile Glu Lys Thr Leu Arg Met Ala Xaa Leu Pro Leu Leu  
 565 570 575  
 Pro Thr Lys Lys Ala Phe Glu Lys Ala Cys Ser Gln Tyr Asn Ser Cys  
 580 585 590  
 Ala Glu Met Leu Glu Lys Val Lys Pro Tyr Cys Lys Glu Ser Leu Ala  
 595 600 605  
 Tyr Val Thr Ser Lys Glu Arg Leu Val Ser Leu Asp Glu Asp Leu Arg  
 610 615 620  
 Arg Ala Tyr Thr Glu Cys Gln Lys Arg Phe Gln Gly Asp Ser Gly Leu  
 625 630 635 640  
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Arg Glu Arg Ile Gln  
 645 650 655  
 Glu Phe Glu Thr Gln Gly Leu Asp Leu Val Glu Lys Glu Leu Leu Cys  
 660 665 670  
 Val Ser Ser Arg Leu Arg Asn Thr Glu Cys Asp Cys Val Ser Gly Val  
 675 680 685  
 Lys Lys Glu Ala Pro Pro Gly Lys Lys Phe Tyr Ala Gln Tyr Tyr Asp  
 690 695 700  
 Glu Ile Tyr Arg Val Arg Val Gln Ser Arg Trp Met Thr Met Ser Glu  
 705 710 715 720  
 Arg Leu Arg Glu Gly Val Gln Ala Cys Asn Lys Met Leu Lys Ala Gly  
 725 730 735  
 Leu Ser Glu Glu Asp Lys Val Leu Lys Glu Glu Glu Tyr Trp Leu Tyr  
 740 745 750  
 Arg Glu Glu Arg Lys Asn Lys Glu Lys Arg Leu Val Gly Thr Lys Ile  
 755 760 765  
 Val Ala Thr Gln Gln Arg Val Ala Ala Phe Glu Ser Ile Glu Val Pro  
 770 775 780  
 Glu Ile Pro Glu Ala Pro Glu Glu Lys Pro Ser Leu Leu Asp Lys Ala  
 785 790 795 800  
 Arg Ser Leu Phe Thr Arg Glu Asp His Thr  
 805 810

&lt;210&gt;1129

&lt;211&gt;132

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1129

Val Ala Cys Arg Ala Gly Ser Ser Glu Gly Ala Thr Glu Thr Pro Ser  
 1 5 10 15  
 Gly Ile Ser Ser Gly Arg Thr Val Gly Thr Ser Arg Phe Ala Lys Arg  
 20 25 30  
 His Arg Ser Pro Glu Thr Thr Ser Thr Pro Pro Asn Ala Glu Arg Pro  
 35 40 45  
 Met Pro Asn Pro Lys Glu Ile Ala Ala Leu Asn Pro Glu Ile Pro Asn  
 50 55 60  
 Val Arg Lys Arg Ala Pro Glu Ile Lys Lys Ser Thr Pro Arg Thr Lys  
 65 70 75 80  
 Lys Val Ile Ala Lys Thr Arg Asn Leu Asp Arg Gln Lys Lys Ala Pro

85 90 95  
 Thr Glu Trp Ser Gly Gly Gly Gly Ser Cys Gly Asp Arg Gly Thr  
 100 105 110  
 Cys Ile Met Asn Leu Trp Arg His His Ala Gln Thr His Lys Leu Asn  
 115 120 125  
 Pro Leu Ser Tyr  
 130  
 <210>1130  
 <211>120  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1130  
 Trp Arg His Arg Phe Ile Met Gln Val Pro Leu Ser Pro Gln Leu Pro  
 1 5 10 15  
 Pro Pro Pro Pro Asp His Ser Val Gly Ala Phe Phe Cys Leu Ser Lys  
 20 35 30  
 Phe Arg Val Leu Ala Ile Thr Phe Leu Val Leu Gly Val Leu Phe Leu  
 35 40 45  
 Ile Ser Gly Ala Leu Phe Leu Thr Leu Gly Ile Ser Gly Leu Ser Ala  
 50 55 60  
 Ala Ile Ser Phe Gly Leu Gly Ile Gly Leu Ser Ala Leu Gly Gly Val  
 65 70 75 80  
 Leu Val Val Ser Gly Leu Leu Cys Leu Leu Ala Lys Arg Glu Val Pro  
 85 90 95  
 Thr Val Arg Pro Glu Glu Ile Pro Glu Gly Val Ser Val Ala Pro Ser  
 100 105 110  
 Glu Glu Pro Ala Leu Gln Ala Thr Gln Lys Thr Leu Ala Gln Leu Pro  
 115 120 125  
 Lys Glu Leu Asp Gln Leu Asp Arg Tyr Ile Gln Glu Val Val Ser Cys  
 130 135 140  
 Leu Gly Lys Leu Lys Asp Leu Arg Cys Glu Asp Gln Gly Leu Leu Lys  
 145 150 155 160  
 Asp Ala Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp Met  
 165 170 175  
 Met Thr Glu Phe Val Glu Leu Gln Gln Ile Met Asp Gln Glu Gly Trp  
 180 185 190  
 Tyr Leu Lys Cys Leu Ile Gln Glu Met Arg Asp Ile Gly Ser Thr Leu  
 195 200 205  
 Phe Met Ser Gln Val Ser Leu Phe Lys Leu Trp Glu Trp Leu Gly Tyr  
 210 215 220  
 Leu Pro Ser Gly Asp Val Arg Gly Glu Arg Leu Lys Lys Ser Ala Arg  
 225 230 235 240  
 Glu Val Val Asp Arg Phe Met Arg Arg Ile Cys Asp Thr Arg Lys Val  
 245 250 255  
 Ala Met Thr Phe Asp Arg Asn Ala Tyr Gly Val Ala Lys Thr Ala Phe  
 260 265 270  
 Glu Lys Ala Phe Gly Ala Leu Glu Thr Cys Val Tyr Lys Ser Met Thr  
 275 280 285  
 Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr Lys Lys Thr Lys Ile Leu  
 290 295 300  
 Arg Asp Glu Glu Lys Ile Leu Arg Ile Cys Tyr Leu Glu Leu Arg Arg  
 305 310 315 320  
 <210>1131  
 <211>249  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1131  
 Gly Glu Asp Ile Lys Asp Met Leu Ser Arg Val Glu Glu Ile Glu Met  
 1 5 10 15  
 Met Leu Arg Val Ile Glu Leu Pro Leu Leu Pro Ile Lys Gln Ala Leu  
 20 25 30  
 Glu Lys Ala Phe Val Gln Tyr Asn Ser Tyr Lys Ala Lys Leu Thr Lys  
 35 40 45  
 Val Glu Pro Cys Phe Arg Glu Ser Pro Ala Tyr Ile Thr Ser Glu Glu

50 55 60  
 Arg Leu Xaa Ser Leu Asp Gln Thr Leu Glu Arg Ala Tyr Lys Glu Tyr  
 65 70 75 80  
 Gln Lys Arg Phe Gln Glu Pro Ser Arg Leu Glu Ser Glu Val Ser Gly  
 85 90 95  
 Cys Arg Glu His Leu Arg Glu Gln Val Lys Gln Phe Glu Thr Gln Gly  
 100 105 110  
 Leu Asp Leu Ile Lys Glu Glu Leu Ile Phe Val Ser Asp Val Leu Phe  
 115 120 125  
 Arg Lys Met Val Ser Cys Leu Val Ser Thr Val His Val Pro Phe Met  
 130 135 140  
 Glu Phe Tyr Tyr Glu Tyr Phe Glu Leu His Arg Leu Arg Leu Arg Ala  
 145 150 155 160  
 Gln Trp Met Ala Asn Ala Glu Ile Tyr Ser Lys Val Arg Lys Ala Phe  
 165 170 175  
 Pro Glu Met Leu Lys Glu Thr Leu Glu Lys Ala Lys Ala Pro Arg Glu  
 180 185 190  
 Glu Glu Tyr Trp Leu Leu Cys Gln Glu Arg Lys Ser Lys Glu Lys Arg  
 195 200 205  
 Leu Ile Leu Asn Lys Ile Glu Ala Ala Gln Gln Arg Val Lys Asp Leu  
 210 215 220  
 Glu Pro Pro Pro Ile Lys Glu Thr Gly Lys Gln Lys Arg Lys Lys Glu  
 225 230 235 240  
 Tyr Ser Phe Phe Ile Arg Leu Lys Ser  
 245  
 <210>1132  
 <211>679  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1132  
 Met Pro Glu Pro Leu Tyr Thr Asn Lys Leu Ile Thr Glu Lys Ser Pro  
 1 5 10 15  
 Tyr Leu Leu Leu Tyr Ala His Thr Pro Val Asn Trp Tyr Pro Trp Gly  
 20 25 30  
 Ala Glu Ala Phe His Ile Ala Ala Ile Glu Asn Lys Pro Val Phe Leu  
 35 40 45  
 Ser Ile Gly Cys Lys His Ser Arg Trp Cys Gln Val Met Leu Gln Glu  
 50 55 60  
 Ser Tyr Thr Asn Pro Glu Ile Ala Ala Met Leu Asn Glu Tyr Phe Val  
 65 70 75 80  
 Asn Val Lys Val Asp Lys Glu Glu Leu Pro Tyr Val Ala Lys Leu Tyr  
 85 90 95  
 Gly Asp Leu Ala Gln Met Leu Ala Val Ser Gly Asp His Gln Glu Thr  
 100 105 110  
 Val Ser Trp Pro Leu Asn Val Phe Leu Thr Pro Asp Leu Val Pro Phe  
 115 120 125  
 Phe Ser Val Asn Tyr Leu Gly Asn Glu Gly Lys Leu Gly Leu Pro Ser  
 130 135 140  
 Phe Pro Gln Ile Ile Asp Lys Leu His Phe Met Trp Glu Asp Ala Glu  
 145 150 155 160  
 Glu Arg Glu Ala Leu Val Glu Gln Ala Met Arg Phe Leu Glu Ile Ala  
 165 170 175  
 Ser Phe Leu Glu Gly Cys Val Arg Lys Glu Ile Leu Asp Glu Ser Ser  
 180 185 190  
 Leu Lys Arg Thr Val Ala Ala Leu Tyr Gln Asp Ile Asp Pro His Tyr  
 195 200 205  
 Gly Gly Val Lys Ala Phe Pro Lys Arg Leu Pro Gly Leu Leu Leu Gln  
 210 215 220  
 Phe Phe Leu Arg Tyr Ser Leu Glu Tyr Gln Glu Ser Arg Gly Leu Phe  
 225 230 235 240  
 Phe Val Asp Arg Ser Leu Ser Met Val Ala Leu Gly Gly Val Arg Asp  
 245 250 255  
 His Ile Gly Gly Gly Val Tyr Ser Tyr Thr Ile Asp Asp Lys Trp Leu  
 260 265 270

Ile Pro Ala Phe Glu Lys Arg Leu Ile Asp Asn Ala Leu Met Ala Leu  
 275 280 285  
 Asn Tyr Leu Glu Ala Trp Ala Cys Leu Gly Lys Glu Glu Tyr Arg Gly  
 290 295 300  
 Ile Gly Lys Gln Ile Leu Ser Tyr Ile Leu Ser Glu Leu Tyr Ser Pro  
 305 310 315 320  
 Glu Val Gly Ala Phe Tyr Ser Ser Glu Glu Ala Glu Asn Trp Gly Ala  
 325 330 335  
 Gly Gly Gln Asn Phe Tyr Thr Trp Ser Val Glu Glu Ile Ser Asn Ala  
 340 345 350  
 Leu Gly Glu Asp Ala Glu Ile Phe Cys Asp Tyr Tyr Gly Ile Ser Arg  
 355 360 365  
 Glu Gly Phe Phe Asn Gly Arg Asn Ile Leu His Ile Pro Val His Arg  
 370 375 380  
 Glu Ile Glu Glu Leu Ser Glu Lys Tyr His Arg Ser Ile Glu Ala Ile  
 385 390 395 400  
 Glu Asp Ile Val Asp Arg Ser Arg Asp Ile Leu Lys Gly Ile Arg Ala  
 405 410 415  
 Gln Arg Ser His Arg Ser Lys Asp Asp Leu Ser Leu Thr Phe Asn Asn  
 420 425 430  
 Gly Trp Met Ile Tyr Thr Phe Ala Tyr Ala Gly Arg Leu Leu Gly Glu  
 435 440 445  
 Val Glu Tyr Ile Glu Ile Glu Lys Lys Cys Gly Glu Phe Val Arg Asn  
 450 455 460  
 Ser Leu Tyr Lys His His Glu Leu Tyr Arg Arg Trp Arg Glu Gly Glu  
 465 470 475 480  
 Ala Lys Tyr Arg Ala Ser Leu Glu Asp Tyr Gly Ala Leu Ile Leu Gly  
 485 490 495  
 Val Leu Ala Leu Tyr Glu Ser Gly Cys Gly Ser Phe Trp Leu Ser Phe  
 500 505 510  
 Ala Glu Glu Leu Met Gln Glu Val Val Leu Ser Phe Arg Ser Glu Glu  
 515 520 525  
 Gly Gly Phe Tyr Ser Asp Asp Gly Arg Asp Ser Thr Leu Leu Ile Lys  
 530 535 540  
 Gln Ser Pro Leu Ser Asp Gly Glu Thr Ile Ser Gly Asn Ala Leu Ile  
 545 550 555 560  
 Cys Gln Cys Leu Leu Ser Leu His Leu Ile Thr Glu Lys Lys His Tyr  
 565 570 575  
 Leu Thr Tyr Ala Glu Asp Ile Leu Gln Ile Ala Gln Ala Cys Ala His  
 580 585 590  
 Thr His Lys Phe Ser Ser Leu Gly Leu Leu Ile Ala Ser Gln Asn Tyr  
 595 600 605  
 Phe Ser Arg Lys His Val Lys Val Leu Ile Pro Leu Gly Asp Gln Glu  
 610 615 620  
 Asp Arg Ser Pro Val Leu Lys Cys Leu Ser Gly Leu Phe Leu Pro Tyr  
 625 630 635 640  
 Leu Ser Leu Ile Trp Met Thr Gln Glu Asn Gln Glu His Leu Glu Thr  
 645 650 655  
 Val Leu Pro Glu Tyr Glu His Cys Leu Ile Pro Lys Arg Gly Ile Ala  
 660 665 670  
 Gln Leu Arg Gln Phe Met Phe  
 675

&lt;210&gt;1133

&lt;211&gt;365

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1133

Glu Val Met Lys Leu Tyr Gln Thr Leu Arg Gly Ile Val Leu Val Ser  
 1 5 10 15  
 Thr Gly Cys Ile Phe Leu Gly Met His Gly Gly Tyr Ala Ala Glu Val  
 20 25 30  
 Pro Val Thr Ser Ser Gly Tyr Glu Asn Leu Leu Glu Ser Lys Glu Gln  
 35 40 45  
 Asp Pro Ser Gly Leu Ala Ile His Asp Arg Ile Leu Phe Lys Val Asp

50 55 60  
 Glu Glu Asn Val Val Thr Ala Leu Asp Val Ile His Lys Leu Asn Leu  
 65 70 75 80  
 Leu Phe Tyr Asn Ser Tyr Pro His Leu Ile Asp Ser Phe Pro Ala Arg  
 85 90 95  
 Ser Gln Tyr Tyr Thr Ala Met Trp Pro Val Val Leu Glu Ser Val Ile  
 100 105 110  
 Asp Glu Phe Leu Met Val Ala Asp Ala Lys Ala Lys Arg Ile Ala Thr  
 115 120 125  
 Asp Pro Thr Ala Val Asn Gln Glu Ile Glu Glu Met Phe Gly Arg Asp  
 130 135 140  
 Leu Ser Pro Leu Tyr Ala His Phe Glu Met Ser Pro Asn Asp Ile Phe  
 145 150 155 160  
 Asn Val Ile Asp Arg Thr Leu Thr Ala Gln Arg Val Met Gly Met Met  
 165 170 175  
 Val Arg Ser Lys Val Met Leu Lys Val Thr Pro Gly Lys Ile Arg Glu  
 180 185 190  
 Tyr Tyr Arg Lys Leu Glu Glu Glu Ala Ser Arg Lys Val Ile Trp Lys  
 195 200 205  
 Tyr Arg Val Leu Thr Ile Lys Ala Asn Thr Glu Ser Leu Ala Ser Gln  
 210 215 220  
 Ile Ala Asp Lys Val Arg Ala Arg Leu Asn Glu Ala Lys Thr Trp Asp  
 225 230 235 240  
 Lys Asp Arg Leu Thr Ala Leu Val Ile Ser Gln Gly Gly Gln Leu Val  
 245 250 255  
 Cys Ser Glu Glu Phe Ser Arg Glu Asn Ser Glu Leu Ser Gln Ser His  
 260 265 270  
 Lys Gln Glu Leu Asp Leu Ile Gly Tyr Pro Lys Glu Leu Cys Gly Leu  
 275 280 285  
 Pro Lys Ala His Lys Ser Gly Tyr Lys Leu Tyr Met Leu Leu Asp Lys  
 290 295 300  
 Thr Ser Gly Ser Ile Glu Pro Leu Asp Val Met Glu Ser Lys Ile Lys  
 305 310 315 320  
 Gln His Leu Phe Ala Leu Glu Ala Glu Ser Val Glu Lys Gln Tyr Lys  
 325 330 335  
 Asp Arg Leu Arg Lys Arg Tyr Gly Tyr Asp Ala Ser Met Ile Ala Lys  
 340 345 350  
 Leu Leu Ser Glu Glu Ala Pro Pro Leu Phe Ser Leu Leu  
 355 360 365  
 <210>1134  
 <211>277  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1134  
 Val Thr Arg Ser Ser Pro Ala Gln Leu Ser Arg Phe Leu Ser Glu Ile  
 1 5 10 15  
 Gln Asn Lys Pro Lys Lys Ser Leu Ser Gln Asn Phe Leu Val Asp Gln  
 20 25 30  
 Asn Ile Val Lys Lys Ile Val Ala Thr Ser Glu Val Ile Pro Gln Asp  
 35 40 45  
 Trp Val Leu Glu Ile Gly Pro Gly Phe Gly Ala Leu Thr Glu Glu Leu  
 50 55 60  
 Ile Ala Ala Gly Ala Gln Val Ile Ala Ile Glu Lys Asp Pro Met Phe  
 65 70 75 80  
 Ala Pro Ser Leu Glu Glu Leu Pro Ile Arg Leu Glu Ile Ile Asp Ala  
 85 90 95  
 Cys Lys Tyr Pro Leu Asp Gln Leu Gln Glu Tyr Lys Thr Leu Gly Lys  
 100 105 110  
 Gly Arg Val Val Ala Asn Leu Pro Tyr His Ile Thr Thr Pro Leu Leu  
 115 120 125  
 Thr Lys Leu Phe Leu Glu Ala Pro Asp Phe Trp Lys Thr Val Thr Val  
 130 135 140  
 Met Val Gln Asp Glu Val Ala Arg Arg Ile Val Ala Gln Pro Gly Gly  
 145 150 155 160

Arg Asp Tyr Gly Ser Leu Thr Ile Phe Leu Gln Phe Phe Ala Asp Ile  
 165 170 175  
 His Tyr Ala Phe Lys Val Ser Ala Ser Cys Phe Tyr Pro Lys Pro Gln  
 180 185 190  
 Val Gln Ser Ala Val Ile His Met Lys Val Lys Glu Thr Leu Pro Leu  
 195 200 205  
 Ser Asp Glu Glu Ile Pro Val Phe Phe Thr Leu Thr Arg Thr Ala Phe  
 210 215 220  
 Gln Gln Arg Arg Lys Val Leu Ala Asn Thr Leu Lys Gly Leu Tyr Pro  
 225 230 235 240  
 Lys Glu Gln Val Glu Gln Ala Leu Lys Glu Leu Gly Leu Leu Leu Asn  
 245 250 255  
 Val Arg Pro Glu Val Leu Ser Leu Asn Asp Tyr Leu Ala Leu Phe His  
 260 265 270  
 Lys Met Gln Ala Gly  
 275

&lt;210&gt;1135

&lt;211&gt;640

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1135

Met Thr Ser Ser Ser Cys Pro Leu Leu Asp Leu Ile Leu Ser Pro Ala  
 1 5 10 15  
 Asp Leu Lys Lys Leu Ser Ile Ser Gln Leu Pro Gly Leu Ala Glu Glu  
 20 25 30  
 Ile Arg Tyr Arg Ile Ile Ser Val Leu Ser Gln Thr Gly Gly His Leu  
 35 40 45  
 Ser Ser Asn Leu Gly Ile Val Glu Leu Thr Ile Ala Leu His Tyr Val  
 50 55 60  
 Phe Ser Ser Pro Lys Asp Lys Phe Ile Phe Asp Val Gly His Gln Thr  
 65 70 75 80  
 Tyr Pro His Lys Leu Leu Thr Gly Arg Asn Asn Glu Gly Phe Asp His  
 85 90 95  
 Ile Arg Asn Asp Asn Gly Leu Ser Gly Phe Thr Asn Pro Thr Glu Ser  
 100 105 110  
 Asp His Asp Leu Phe Phe Ser Gly His Ala Gly Thr Ala Leu Ser Leu  
 115 120 125  
 Ala Leu Gly Met Ala Gln Thr Thr Pro Leu Glu Ser Arg Thr His Val  
 130 135 140  
 Ile Pro Ile Leu Gly Asp Ala Ala Phe Ser Cys Gly Leu Thr Leu Glu  
 145 150 155 160  
 Ala Leu Asn Asn Ile Ser Thr Asp Leu Ser Lys Phe Val Val Ile Leu  
 165 170 175  
 Asn Asp Asn Asn Met Ser Ile Ser Lys Asn Val Gly Ala Met Ser Arg  
 180 185 190  
 Ile Phe Ser Arg Trp Leu His His Pro Ala Thr Asn Lys Leu Thr Lys  
 195 200 205  
 Gln Val Glu Lys Trp Leu Ala Lys Ile Pro Arg Tyr Gly Asp Ser Leu  
 210 215 220  
 Ala Lys His Ser Arg Arg Leu Ser Gln Cys Val Lys Asn Leu Phe Cys  
 225 230 235 240  
 Pro Thr Pro Leu Phe Glu Gln Phe Gly Leu Ala Tyr Val Gly Pro Ile  
 245 250 255  
 Asp Gly His Asn Val Lys Lys Leu Ile Pro Ile Leu Gln Ser Val Arg  
 260 265 270  
 Asn Leu Pro Phe Pro Ile Leu Val His Val Cys Thr Thr Lys Gly Lys  
 275 280 285  
 Gly Leu Asp Gln Ala Gln Asn Asn Pro Ala Lys Tyr His Gly Val Arg  
 290 295 300  
 Ala Asn Phe Asn Lys Arg Glu Ser Ala Lys His Leu Pro Ala Ile Lys  
 305 310 315 320  
 Pro Lys Pro Ser Phe Pro Asp Ile Phe Gly Gln Thr Leu Cys Glu Leu  
 325 330 335  
 Gly Glu Val Ser Ser Arg Leu His Val Val Thr Pro Ala Met Ser Ile

340 345  
 Gly Ser Arg Leu Glu Gly Phe Lys Gln Lys Phe Pro Glu Arg Phe Phe  
 355 360 365  
 Asp Val Gly Ile Ala Glu Gly His Ala Val Thr Phe Ser Ala Gly Ile  
 370 375 380  
 Ala Lys Ala Gly Asn Pro Val Ile Cys Ser Ile Tyr Ser Thr Phe Leu  
 385 390 395 400  
 His Arg Ala Leu Asp Asn Val Phe His Asp Val Cys Met Gln Asp Leu  
 405 410 415  
 Pro Val Ile Phe Ala Ile Asp Arg Ala Gly Leu Ala Tyr Gly Asp Gly  
 420 425 430  
 Arg Ser His His Gly Ile Tyr Asp Met Ser Phe Leu Arg Ala Met Pro  
 435 440 445  
 Gln Met Ile Ile Cys Gln Pro Arg Ser Gln Val Val Phe Gln Gln Leu  
 450 455 460  
 Leu Tyr Ser Ser Leu His Trp Ser Ser Pro Ser Ala Ile Arg Tyr Pro  
 465 470 475 480  
 Asn Ile Pro Ala Pro His Gly Asp Pro Leu Thr Gly Asp Pro Asn Phe  
 485 490 495  
 Leu Arg Ser Pro Gly Asn Ala Glu Thr Leu Ser Gln Gly Glu Asp Val  
 500 505 510  
 Leu Ile Ile Ala Leu Gly Thr Leu Cys Phe Thr Ala Leu Ser Ile Lys  
 515 520 525  
 His Gln Leu Leu Ala Tyr Gly Ile Ser Ala Thr Val Val Asp Pro Ile  
 530 535 540  
 Phe Ile Lys Pro Phe Asp Asn Asp Leu Phe Ser Leu Leu Leu Met Ser  
 545 550 555 560  
 His Ser Lys Val Ile Thr Ile Glu Glu His Ser Ile Arg Gly Gly Leu  
 565 570 575  
 Ala Ser Glu Phe Asn Asn Phe Val Ala Thr Phe Asn Phe Lys Val Asp  
 580 585 590  
 Ile Leu Asn Phe Ala Ile Pro Asp Thr Phe Leu Ser His Gly Ser Lys  
 595 600 605  
 Glu Ala Leu Thr Lys Ser Ile Gly Leu Asp Glu Ser Ser Met Thr Asn  
 610 615 620  
 Arg Ile Leu Thr His Phe Asn Phe Arg Ser Lys Lys Gln Thr Val Gly  
 625 630 635 640  
 Asp Val Arg Val

&lt;210&gt;1136

&lt;211&gt;127

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1136

Ala Ser Pro Ala Arg Ser Ile Ala Lys Ile Thr Gly Arg Ser Cys Met  
 1 5 10 15  
 Gln Thr Ser Trp Lys Thr Leu Ser Arg Ala Arg Cys Lys Asn Val Glu  
 20 25 30  
 Tyr Ile Glu Gln Ile Thr Gly Leu Pro Ala Phe Ala Met Pro Ala Leu  
 35 40 45  
 Lys Val Thr Ala Trp Pro Ser Ala Ile Pro Thr Ser Lys Lys Arg Ser  
 50 55 60  
 Gly Asn Phe Cys Leu Lys Pro Ser Lys Arg Asp Pro Ile Asp Ile Ala  
 65 70 75 80  
 Gly Val Thr Thr Trp Arg Arg Glu Glu Thr Ser Pro Ser Ser His Ser  
 85 90 95  
 Val Trp Pro Asn Ile Ser Gly Lys Glu Gly Leu Gly Leu Ile Ala Gly  
 100 105 110  
 Arg Cys Phe Ala Asp Ser Arg Leu Leu Lys Phe Ala Leu Thr Pro  
 115 120 125

&lt;210&gt;1137

&lt;211&gt;554

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumonia

&lt;400&gt;1137

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Met Ser Ser Pro Pro Gln Ala Val Ala Ser Leu Thr Glu Arg Ile Lys
  1      5      10
Thr Leu Leu Glu Ser Asn Phe Cys Gln Ile Ile Val Lys Gly Glu Leu
  20      25      30
Ser Asn Val Ser Leu Gln Pro Ser Gly His Leu Tyr Phe Gly Ile Lys
  35      40      45
Asp Ser Gln Ala Phe Leu Asn Gly Ala Phe Phe His Phe Lys Ser Lys
  50      55      60
Tyr Tyr Asp Arg Lys Pro Lys Asp Gly Asp Ala Val Ile Ile His Gly
  65      70      75
Lys Leu Ala Val Tyr Ala Pro Arg Gly Gln Tyr Gln Ile Val Ala His
  85      90      95
Ala Leu Val Tyr Ala Gly Glu Gly Asp Leu Leu Gln Lys Phe Glu Glu
 100     105     110
Thr Lys Arg Arg Leu Thr Ala Glu Gly Tyr Phe Ala Thr Glu Lys Lys
 115     120     125
Lys Pro Leu Pro Phe Ala Pro Gln Cys Ile Gly Val Ile Thr Ser Pro
 130     135     140
Thr Gly Ala Val Ile Gln Asp Ile Leu Arg Val Leu Ser Arg Arg Ala
 145     150     155     160
Arg Asn Tyr Lys Ile Leu Val Tyr Pro Val Thr Val Gln Gly Asn Ser
 165     170     175
Ala Ala His Glu Ile Ser Lys Ala Ile Glu Val Met Asn Ala Glu Asn
 180     185     190
Leu Ala Asp Val Leu Ile Ile Ala Arg Gly Gly Gly Ser Ile Glu Asp
 195     200     205
Leu Trp Ala Phe Asn Glu Glu Ile Leu Val Lys Ala Ile His Ala Ser
 210     215     220
Thr Ile Pro Ile Val Ser Ala Val Gly His Glu Thr Asp Tyr Thr Leu
 225     230     235     240
Cys Asp Phe Ala Ser Asp Val Arg Ala Pro Thr Pro Ser Ala Ala Ala
 245     250     255
Glu Ile Val Cys Lys Ser Ser Glu Glu Val Gln Val Phe Glu Gly
 260     265     270
Tyr Leu Arg His Leu Leu Ser His Ser Arg Gln Leu Leu Thr Ser Lys
 275     280     285
Lys Gln Gln Leu Leu Pro Trp Arg Arg Phe Leu Asp Arg Ala Glu Phe
 290     295     300
Tyr Thr Thr Ala Gln Gln Gln Leu Asp Ser Ile Glu Ile Ala Ile Gln
 305     310     315     320
Lys Gly Val Gln Gly Lys Ile His Glu Ser Lys Gln Arg Tyr Asp Asn
 325     330     335
Ile Ser Arg Trp Leu Gln Gly Asp Leu Val Ser Arg Met Thr Cys Arg
 340     345     350
Leu Gln Ser Leu Lys Lys Met Leu Ser Gln Ala Leu Ser His Lys Ala
 355     360     365
Leu Ser Leu Gln Val Arg Cys His Gln Leu Lys Lys Ser Leu Thr Tyr
 370     375     380
Pro Arg Gln Ile Gln Gln Ala Ser Gln Lys Leu Ser Pro Trp Arg Gln
 385     390     395     400
Gln Leu Asp Thr Leu Ile Ser Arg Arg Leu His Tyr Gln Lys Glu Glu
 405     410     415
Tyr Phe His Lys His Thr Arg Leu Lys His Ala His Asn Val Leu Glu
 420     425     430
Gln Gln Leu Arg Ser His Val Gln Lys Leu Glu Leu Leu Gly Arg Arg
 435     440     445
Leu Ser Arg Gly Cys Glu Leu Asn Leu Gln Asn Gln Lys Ile Ala Tyr
 450     455     460
Ala Asn Val Lys Glu Thr Leu Ala Thr Ile Leu Glu Arg Arg Tyr Glu
 465     470     475     480
Asn Ser Val Ala Arg Tyr Ser Ala Leu Lys Glu Gln Leu His Ser Leu
 485     490     495
Asn Pro Lys Asn Val Leu Lys Arg Gly Tyr Ala Met Leu Phe Asp Phe

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500 505  
 Asn Glu Asn Ser Ala Met Ile Ser Val Asp Ser Leu Gln Glu Asn Ala  
 515 520 525  
 Arg Val Arg Ile Gln Leu Gln Asp Gly Glu Ala Ile Leu Thr Val Thr  
 530 535 540  
 Asn Ile Glu Ile Cys Lys Leu Ile Lys Gly  
 545 550

&lt;210&gt;1138

&lt;211&gt;184

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1138

Met Thr Tyr Ala Gln Val Glu Val Leu Met Ala Thr Pro Asp Ile Ser  
 1 5 10 15  
 Lys Tyr His Gly Leu Arg Asp Arg Cys Leu Met Glu Leu Phe Tyr Ser  
 20 25 30  
 Ser Gly Leu Arg Ile Ser Glu Ile Val Ala Val Asn Lys Gln Asp Phe  
 35 40 45  
 Asp Leu Ser Thr His Leu Ile Arg Ile Arg Gly Lys Gly Lys Lys Glu  
 50 55 60  
 Arg Ile Ile Pro Val Thr Ser Asn Ala Ile Gln Trp Ile Gln Ile Tyr  
 65 70 75 80  
 Leu Asn His Pro Asp Arg Lys Arg Leu Glu Lys Asp Pro Gln Ala Ile  
 85 90 95  
 Phe Leu Asn Arg Phe Gly Arg Arg Ile Ser Thr Arg Ser Ile Asp Arg  
 100 105 110  
 Ser Phe Gln Glu Tyr Leu Arg Arg Ser Gly Leu Ser Gly His Ile Thr  
 115 120 125  
 Pro His Thr Ile Arg His Thr Ile Ala Thr His Trp Leu Glu Ser Gly  
 130 135 140  
 Met Asp Leu Lys Thr Ile Gln Ala Leu Leu Gly His Ser Ser Leu Glu  
 145 150 155 160  
 Thr Thr Thr Val Tyr Thr Gln Val Ser Val Lys Leu Lys Lys Gln Thr  
 165 170 175  
 His Gln Glu Ala His Pro His Ala  
 180

&lt;210&gt;1139

&lt;211&gt;288

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1139

Met Ser His Leu Ile Pro Ser Leu Arg Asn Ser Val Thr Ser Tyr Phe  
 1 5 10 15  
 His Lys Pro Gln Pro Ile Lys Gln Ala Ala Pro Ser Lys Ser Ile Arg  
 20 25 30  
 Asp Ile Cys Asn Ile Ala Tyr Leu Ile Ile Ile Cys Val Leu Val Val  
 35 40 45  
 Val Val Leu Val Gly Ala Met Leu Cys Met Phe Ile Pro Ser Val Gly  
 50 55 60  
 Ile Pro Leu Cys Leu Ser Ser Leu Ala Leu Leu Val Leu Leu Ser Ile  
 65 70 75 80  
 Phe Asn Pro Cys Leu Ile Asn Trp Ile Ser Thr Lys Lys Thr Lys Glu  
 85 90 95  
 Ile Ala Pro Lys Asp Ala Ser Glu Ser Gln Pro Thr Lys Ser Ala Ser  
 100 105 110  
 Arg Lys Gly Ser Pro Gln Leu Ser Pro His His Asp His Glu Pro Lys  
 115 120 125  
 Asn Phe Ile Arg Thr Gln Leu Glu Lys Gly Val Asn Tyr Val Thr Asn  
 130 135 140  
 Lys Phe Lys Ser Gly Glu Glu Ser Pro His Ile Ser Asp Glu His His  
 145 150 155 160  
 Ser Pro Arg Gln Ser Lys Arg Ser Ser Glu Ile Glu Ser Ser Asp Glu  
 165 170 175  
 Ser Ser Pro Glu Leu His Arg Lys Ala Lys Gly Lys Ala Pro His Thr

|   |     |     |
|---|-----|-----|
| 180   | 185 | 190 |
| Ala Thr Thr Lys Gly Ser Lys Thr Ser Thr Thr Glu Ser Ser Lys Lys |     |     |
| 195   | 200 | 205 |
| Lys Lys Lys Thr Lys His Ser Leu His Arg Thr Thr Ser Ser Ile His |     |     |
| 210   | 215 | 220 |
| Lys Arg Ser Ala Pro Lys Pro Met Val Pro Ser Lys Lys Arg Lys Pro |     |     |
| 225   | 230 | 235 |
| Val Leu Leu Lys Lys Thr Val Pro Leu Pro Ile Glu Asp Leu Glu His |     |     |
| 245   | 250 | 255 |
| Gln Ser Ser Gly Asn Glu Ser Ser Asp Ser Ser Ser Pro Pro Pro Val |     |     |
| 260   | 265 | 270 |
| Gln Arg Lys Ala Ile Leu Pro Trp Phe Cys Lys Gln Pro Thr Asp Pro |     |     |
| 275   | 280 | 285 |

&lt;210&gt;1140

&lt;211&gt;153

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1140

|   |     |     |
|---|-----|-----|
| Met Leu Arg Arg Arg Ile Trp Lys Lys Thr Leu Thr Pro Asp Gln Glu |     |     |
| 1   | 5   | 10  |
| Asn Leu Ser Leu Pro Leu Pro Ser Pro Thr Thr Leu Lys Lys Ile His |     |     |
| 20  | 25  | 30  |
| Ala Leu His Ile Leu Val Arg Ser Gly Lys Thr Tyr Asn Glu Leu Ile |     |     |
| 35  | 40  | 45  |
| Gln Glu Gly Phe Ser Phe Thr Lys Ile Thr Asp Leu Gly Gln Ala Pro |     |     |
| 50  | 55  | 60  |
| Ser Pro Lys Gln Asp Ile Gly Phe Ser Tyr Asn Ser Leu Leu Pro Asn |     |     |
| 65  | 70  | 75  |
| Phe Tyr Phe His Ser Leu Val Ser Val Pro Asn Ile Ser Gly Glu Glu |     |     |
| 85  | 90  | 95  |
| Arg Ala Leu Asn Tyr His Lys Glu Gln Gln Glu Glu Met Ala Val Lys |     |     |
| 100   | 105 | 110 |
| Leu Lys Thr Met Gln Ala Cys Ser Phe Val Phe Arg Ser Leu His Leu |     |     |
| 115   | 120 | 125 |
| Pro Ser Met Gln Thr Lys Asp Lys Lys Ala Gly Phe Gly Leu Leu Thr |     |     |
| 130   | 135 | 140 |
| Phe Phe Pro Trp Lys Ile Tyr Pro Leu                             |     |     |
| 145   | 150 |     |

&lt;210&gt;1141

&lt;211&gt;136

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1141

|   |     |     |
|---|-----|-----|
| Leu Ala Met Ala Lys Asn Val Pro Leu Leu Gly Tyr Ser Ser Leu Glu |     |     |
| 1   | 5   | 10  |
| Gly Tyr Leu Leu Ser Lys Asp Glu Lys Lys Ala Leu Met Leu Pro Leu |     |     |
| 20  | 25  | 30  |
| Gly Lys Arg Gly Gly Val Leu Thr Leu Ser Ser Glu Ile Pro Glu Glu |     |     |
| 35  | 40  | 45  |
| Gly Leu Asn Glu Lys Arg Arg Gly Val Gly Pro Gly Ala Leu Leu Ser |     |     |
| 50  | 55  | 60  |
| Tyr Glu Glu Ala Ser Asp Tyr Cys Val Ala His Gly Tyr Tyr His Val |     |     |
| 65  | 70  | 75  |
| Ile Ser Pro Asn Pro Gln Leu Phe Ala Ser Ser Phe Ser Asp Lys Ile |     |     |
| 85  | 90  | 95  |
| Thr Val Glu Glu Val Ala Pro Ser Val Glu Gln Ile Arg Arg His Val |     |     |
| 100   | 105 | 110 |
| Ile Ser Gln Phe Met Phe Val Glu Tyr Asp Lys Gln Leu Ser Pro Asp |     |     |
| 115   | 120 | 125 |
| Tyr Arg Ser Tyr Ser Cys Ile Phe                                 |     |     |
| 130   | 135 |     |

&lt;210&gt;1142

&lt;211&gt;82

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1142

Met Ile Glu Phe Pro Ser Ala Val Trp Met Ile Glu Glu Ile Leu Pro  
 1 5 10 15  
 Glu Cys Asp Phe Leu Ser Ile Gly Thr Asn Asp Leu Val Gln Tyr Thr  
 20 25 30  
 Leu Gly Ile Ser Arg Glu Ser Ala Leu Pro Lys His Leu Asn Val Thr  
 35 40 45  
 Leu Pro Pro Ala Val Ile Arg Met Ile His His Val Leu Gln Ala Ala  
 50 55 60  
 Asn Lys Ile Arg Phe Leu Leu Ala Phe Val Glu Arg Pro Gln Gly Ser  
 65 70 75 80  
 Ser Val

&lt;210&gt;1143

&lt;211&gt;108

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1143

Leu Phe Asp Ala Leu His Ile Ser Leu His Arg Asn Ile Pro Arg Met  
 1 5 10 15  
 Gly Asn His Glu Thr Tyr Ile His Pro Gly Val Leu Pro Ser Ser His  
 20 25 30  
 Ala Gln Asp Val Ser Arg Ser Thr Val Tyr Pro Ser Arg Ser Phe Ile  
 35 40 45  
 Met Arg Arg Met Leu Met Gly Trp Asn Phe Asn Arg Val Pro Ser Lys  
 50 55 60  
 Ser Ser Glu Gln Leu Met Asp Gly His Arg Ile Pro Leu Ile Phe Phe  
 65 70 75 80  
 Gly Lys His His Pro Thr Ile Ser Ile Leu Asn Val Asn Arg Phe Ser  
 85 90 95  
 Trp Leu Ser Ile Phe Tyr Asn Gly Glu Arg Gly Phe  
 100 105

&lt;210&gt;1144

&lt;211&gt;141

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1144

Met Ala Thr Lys Thr Lys Thr Gln Trp Thr Cys Asn Gln Cys Gly Ala  
 1 5 10 15  
 Thr Ala Pro Lys Trp Leu Gly Gln Cys Pro Gly Cys His Asn Trp Asn  
 20 25 30  
 Ser Leu Val Glu Glu Tyr Val Pro Gln Ala Arg Ser Gly Thr Ser Ser  
 35 40 45  
 Arg Ser Ser Thr Ser Ala Ile Ala Leu Ser Ser Ile Glu Leu Glu Asn  
 50 55 60  
 Glu Ser Arg Ile Phe Ile Asp His Ala Gly Trp Asp Arg Ile Leu Gly  
 65 70 75 80  
 Gly Gly Val Val Arg Gly Ser Leu Thr Leu Leu Gly Gly Asp Pro Gly  
 85 90 95  
 Ile Gly Lys Ser Thr Leu Leu Leu Gln Thr Ala Glu Arg Leu Ala Ser  
 100 105 110  
 Gln Lys Tyr Lys Val Leu Tyr Val Cys Gly Glu Glu Ser Val Thr Gln  
 115 120 125  
 Thr Ser Leu Arg Ala Lys Arg Ser Ile Ser His His Leu  
 130 135 140

&lt;210&gt;1145

&lt;211&gt;77

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1145

Met Thr Lys Ile Gln Cys Ser Ala Gln Tyr Tyr Arg Ser Arg Pro Ala  
 1 5 10 15  
 Glu Arg Ala Gln Thr Pro Pro Gln Pro Phe Leu Ala Arg Asp Arg Ala

20 25 30  
 Asp Phe Trp Glu Arg His Pro Arg Phe Ser Ala Cys Cys Arg Val Leu  
 35 40 45  
 Leu Leu Val Ala Trp Val Val Leu Ala Leu Leu Phe Leu Phe Val Met  
 50 55 60  
 Leu Leu Pro Leu Ala Ala Gly Ser Tyr Leu Leu Ala Phe  
 65 70 75  
 <210>1146  
 <211>121  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1146  
 Leu Thr Tyr Thr Arg Val Asn Asp Gly His Leu Ala Pro Phe Arg Ala  
 1 5 10 15  
 Gly Ala Lys Trp Ile Leu Ile His Tyr Val Arg Leu Arg Arg Gln His  
 20 25 30  
 Asn Gln Asn Asp Phe Phe Thr Pro Gly His Ser Cys Tyr Tyr Ala Arg  
 35 40 45  
 Leu Ala Phe Asn Gln Thr Gln Arg Leu Tyr His Gln Leu Phe Asn Val  
 50 55 60  
 Glu Lys Leu Arg Ser Ile Tyr Ala Asn Met Asp Lys Asp Pro Leu Cys  
 65 70 75 80  
 His Pro Trp Ala Xaa Ile Pro Ile Tyr Asp Leu Leu Lys Thr Glu Asp  
 85 90 95  
 His Gly Asp Gly Phe Leu Glu Gln Gln Glu Asp Arg Glu Tyr Pro Ser  
 100 105 110  
 Arg Ala Ala Gln Asp Gln Phe Trp Gly  
 115 120  
 <210>1147  
 <211>170  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1147  
 Val Ser Ala Glu Phe Lys Leu Met Leu Asp Leu Arg Gln Tyr Met Gly  
 1 5 10 15  
 Ser Val Met Gln Arg Leu Gly Leu Ser Asn Leu Phe His Cys Leu Leu  
 20 25 30  
 Leu Phe Leu Arg Tyr Tyr Tyr Ser Lys Leu Val Phe Gly Leu Thr Val  
 35 40 45  
 Leu Leu Ala Ala Ile Ser Val Ile Cys Leu Leu Gly Cys Ser Glu Pro  
 50 55 60  
 Ser Leu Ser Ser Phe Thr Glu Tyr Val Gly Pro Glu Tyr Ser Ala Ala  
 65 70 75 80  
 Ala Gln Leu Ser Ile Glu Gln Ser Cys His Asp Glu Val Tyr Gly Gln  
 85 90 95  
 Gln Val Val Val Thr Trp Ser Leu Pro Ser Arg Met Arg Lys Cys Leu  
 100 105 110  
 Pro Val Thr Leu Tyr Leu Trp Val Tyr Tyr Gly Asn Gly Lys Val Glu  
 115 120 125  
 Lys Leu Thr Tyr Glu Val Asn Gln Ser Ala Gly Tyr Arg Val Tyr Cys  
 130 135 140  
 Leu Lys Gly Leu Glu Tyr Lys Glu Leu Gln Gly Ile Ile Ser Tyr Pro  
 145 150 155 160  
 Leu Arg Tyr Val Ala Gly Ile Lys Arg Leu  
 165 170  
 <210>1148  
 <211>101  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1148  
 Met Val Ser Pro Leu Ser Leu Phe His Lys Met Leu Leu Glu Asn Trp  
 1 5 10 15  
 Thr Pro Val Glu Glu Pro Phe Pro Trp Pro Pro Ala Glu Lys Asn Gln  
 20 25 30

Lys Ile Phe Ala Trp Ala Leu Asn Gln Ser Lys Leu Ile Phe Val Ser  
           35                          40                          45  
 Thr Ser Gly Asn Ile Ala Gln Pro Arg Leu Val Thr Asp Ser Met Ser  
           50                          55                          60  
 Met Met Ile Val Asn Ala Ala Asn Arg Thr Met Ser Arg Asp Gly Ala  
           65                          70                          75                          80  
 Gly Thr Asn Gln Val Leu Ser Ala Ala Val Ser Val Asp Ser Tyr Gly  
                           85                          90                          95  
 Cys Arg Asn Asp Leu  
                           100

&lt;210&gt;1149

&lt;211&gt;119

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1149

Val Ala Leu Lys Ile Arg Leu Arg Gln Gln Gly Arg Arg Asn His Val  
           1                          5                          10                          15  
 Val Tyr Arg Leu Val Leu Ala Asp Val Glu Ser Pro Arg Asp Gly Lys  
                           20                          25                          30  
 Tyr Ile Glu Leu Leu Gly Trp Tyr Asp Pro His Ser Ser Ile Asn Tyr  
                           35                          40                          45  
 Gln Leu Lys Ser Glu Arg Ile Phe Tyr Trp Leu Glu Arg Gly Ala Gln  
                           50                          55                          60  
 Leu Ser Ser Lys Ala Glu Ala Leu Val Lys Gln Gly Ala Pro Gly Val  
                           65                          70                          75                          80  
 Tyr Ser Ala Leu Leu Ser Lys Gln Glu Ala Arg Lys Leu Val Val Arg  
                           85                          90                          95  
 Lys Lys Arg Arg Ala Tyr Arg Gln Arg Arg Ser Thr Gln Arg Glu Glu  
                           100                          105                          110  
 Ala Ala Lys Asp Ala Thr Lys  
                           115

&lt;210&gt;1150

&lt;211&gt;170

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1150

Met Ser Glu Val Lys Pro Leu Phe Leu Lys Asn Asp Ser Phe Asp Leu  
           1                          5                          10                          15  
 Ala Thr Gln Arg Phe Gln Asn Leu Ile Asn Met Leu Gln Glu Gln Ala  
                           20                          25                          30  
 Glu Ile Tyr Asn Glu Tyr Glu Glu Lys Asn Ala Arg Val Gln Asn Glu  
                           35                          40                          45  
 Ile Lys Glu Gln Lys Asp Phe Val Lys Arg Cys Ile Glu Asp Phe Glu  
                           50                          55                          60  
 Ala Arg Gly Leu Gly Val Leu Lys Glu Glu Leu Ala Ser Leu Thr Arg  
                           65                          70                          75                          80  
 Asp Phe His Asp Lys Ala Lys Ala Glu Thr Ser Met Leu Ile Glu Cys  
                           85                          90                          95  
 Pro Cys Ile Gly Phe Tyr Tyr Ser Ile His Gln Glu Glu Gln Arg Gln  
                           100                          105                          110  
 Arg Gln Glu Arg Leu Gln Lys Met Ala Glu Arg Tyr Arg Asp Cys Lys  
                           115                          120                          125  
 Gln Val Leu Glu Ala Val Gln Val Glu Gln Lys Asp Met Ile Ser Ser  
                           130                          135                          140  
 Arg Val Val Val Asp Asp Ser Tyr Phe Glu Glu Glu Lys Glu Glu Gln  
                           145                          150                          155                          160  
 Lys Val Asp Asn Arg Lys Lys Glu Gln Asp  
                           165                          170

&lt;210&gt;1151

&lt;211&gt;90

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1151

Leu Val Phe Ser Tyr Tyr Cys Met Gly Leu Phe Phe Phe Ser Gly Ala

1 5 10 15  
 Ile Ser Ser Cys Gly Leu Leu Val Ser Leu Gly Val Gly Leu Gly Leu  
 20 25 30  
 Ser Val Leu Gly Val Leu Leu Leu Leu Ala Gly Leu Leu Leu Phe  
 35 40 45  
 Lys Ile Gln Ser Met Leu Arg Glu Val Pro Lys Ala Pro Asp Leu Leu  
 50 55 60  
 Asp Leu Glu Asp Ala Ser Glu Arg Leu Arg Val Lys Ala Ser Arg Ser  
 65 70 75 80  
 Leu Ala Ser Leu Pro Lys Lys Ser Val Ser  
 85 90

&lt;210&gt;1152

&lt;211&gt;94

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1152

Leu Leu Leu Cys Ser Ala Met Gly Ile Phe Ser Ser Ala Lys Ala Leu  
 1 5 10 15  
 Ile Ala Trp Asn Lys Ala Ser Leu Asn Leu Ser Pro Ala Leu Leu Gly  
 20 25 30  
 Ala Ile Leu Ile Phe Glu Pro Ile Phe Gly Leu Val Leu Thr Tyr Leu  
 35 40 45  
 Tyr Ser Gln Ser Leu Pro Ser Leu Gln Glu Gly Ile Gly Ile Phe Leu  
 50 55 60  
 Met Leu Gly Gly Ser Leu Leu Cys Leu Val Leu Phe Gly Arg Lys Val  
 65 70 75 80  
 Gln Lys Ser Leu Glu Asn Ser Gln Val Ser Ser Ser Asn Glu  
 85 90

&lt;210&gt;1153

&lt;211&gt;248

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1153

Met Phe Pro Ser Ala Asn Gln Glu Ser Arg Thr Arg Asn Val Pro Leu  
 1 5 10 15  
 Gly Ile Phe His Gly Leu Val Ala Cys Leu Tyr Trp Gly Ile Val Phe  
 20 25 30  
 Val Ile Pro Asn Phe Leu Gly Ser Phe Gly Asp Leu Asp Ile Val Leu  
 35 40 45  
 Thr Arg Tyr Thr Ile Phe Gly Ile Phe Ser Leu Ile Ala Cys Ala Ile  
 50 55 60  
 Lys Asn Pro Ser Val Ile Lys Lys Thr Pro Leu Tyr Ile Trp Arg Lys  
 65 70 75 80  
 Ser Leu Leu Trp Thr Leu Leu Ile Asn Pro Val Tyr Tyr Phe Gly Ile  
 85 90 95  
 Thr Leu Gly Ile Arg Tyr Val Gly Ser Ala Ile Thr Val Val Ile Ala  
 100 105 110  
 Ser Leu Ala Pro Thr Ala Val Leu Tyr His Ser Asn Thr Lys Gln Lys  
 115 120 125  
 Glu Leu Pro Tyr Ser Leu Leu Phe Ala Ile Ser Ser Val Ile Ile Thr  
 130 135 140  
 Gly Val Ile Leu Thr His Leu Ser Ala Leu Asn Leu Pro Thr Ala Ala  
 145 150 155 160  
 Ser Pro Leu Tyr Ser Ile Leu Gly Val Ile Ala Val Ile Leu Ser Thr  
 165 170 175  
 Ser Leu Trp Val Ile Tyr Val Ile Arg Asn Gln Ser Leu Leu Glu Lys  
 180 185 190  
 His Pro Asn Leu Thr Pro Asp Tyr Leu Glu Leu Pro His Arg Asn Gln  
 195 200 205  
 Arg Phe Asp His Leu Pro Pro Tyr Asp Tyr Tyr Ser Arg Ser Leu Trp  
 210 215 220  
 Asn Tyr Pro Arg Asn Thr Gln Ser Tyr Leu Ala Tyr Thr Gly Ile Arg  
 225 230 235 240  
 Ala Thr Ala Leu Leu Val Ala Met

245

&lt;210&gt;1154

&lt;211&gt;149

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1154

Met Ala Val Gln Ser Ile Lys Glu Ala Val Thr Ser Ala Ala Thr Ser  
 1 5 10 15  
 Val Gly Cys Val Asn Cys Ser Arg Glu Ala Ile Pro Ala Phe Asn Thr  
 20 25 30  
 Glu Glu Arg Ala Thr Ser Ile Ala Arg Ser Val Ile Ala Ala Ile Ile  
 35 40 45  
 Ala Val Val Ala Ile Ser Leu Leu Gly Leu Gly Leu Val Val Leu Ala  
 50 55 60  
 Gly Cys Cys Pro Leu Gly Met Ala Ala Gly Ala Ile Thr Met Leu Leu  
 65 70 75 80  
 Gly Val Ala Leu Leu Ala Trp Ala Ile Leu Ile Thr Leu Arg Leu Leu  
 85 90 95  
 Asn Ile Pro Lys Ala Glu Ile Pro Ser Pro Gly Asn Asn Gly Glu Pro  
 100 105 110  
 Asn Glu Arg Asn Ser Ala Thr Pro Pro Leu Glu Gly Gly Val Ala Gly  
 115 120 125  
 Glu Ala Gly Arg Gly Gly Gly Ser Pro Leu Thr Gln Leu Asp Leu Asn  
 130 135 140  
 Ser Gly Ala Gly Ser  
 145

&lt;210&gt;1155

&lt;211&gt;124

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1155

Met Gly Asn Ser Cys Phe Trp Arg Gly Gly Leu Leu Arg Tyr Pro Cys  
 1 5 10 15  
 Gly Glu Glu Ile Glu Lys Ser Arg Ala Asn Phe Phe Thr Ala Asp Thr  
 20 25 30  
 Thr Thr Val Met Ser Tyr Pro Pro Asn Pro Tyr Gly Leu Tyr Asp Met  
 35 40 45  
 Ala Gly Asn Val Tyr Glu Trp Cys Gln Asp Trp Tyr Gly Tyr Asp Phe  
 50 55 60  
 Tyr Glu Ile Ser Ala Gln Glu Pro Glu Ser Pro Gln Gly Pro Ala Gln  
 65 70 75 80  
 Gly Val Tyr Arg Val Leu Arg Gly Gly Cys Trp Lys Ser Leu Lys Asp  
 85 90 95  
 Asp Leu Arg Cys Ala His Arg His Arg Asn Asn Pro Gly Ala Val Asn  
 100 105 110  
 Ser Thr Tyr Gly Phe Arg Cys Ala Lys Asn Ile Asn  
 115 120

&lt;210&gt;1156

&lt;211&gt;181

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1156

Lys Leu Lys Leu Leu Lys Ala Ser Phe Ile Lys Leu Leu Leu Thr Leu  
 1 5 10 15  
 Asp Trp Pro Thr Glu Leu Leu Leu Lys Asn Arg Pro Phe Asp Phe Thr  
 20 25 30  
 Gly His Pro Glu Glu Glu Lys Leu Ile Lys Asp Ile Leu Leu Lys Glu  
 35 40 45  
 Glu Gly Asn Lys Tyr Phe Ser Leu Glu Ser Lys Lys Leu Leu Ala Arg  
 50 55 60  
 His Met Met His Asn Ile Val Val Leu Ser Glu Glu Pro Gly Arg Ser  
 65 70 75 80  
 Ala Phe Leu Gly Arg Thr Ala Phe Phe Pro Asn Lys Tyr Pro Ile Ala  
 85 90 95

1140

Gln Gly Gly Val Gly Ile Pro Ser Thr Ile Gly Asn Leu Phe Thr Ile  
 100 105 110  
 Trp Tyr Cys Phe Tyr Phe Tyr Arg Ala Ala Thr Pro Gln Ser Asp His  
 115 120 125  
 Pro Asp Gly Cys Gly Phe Ile Leu Leu Glu Arg Leu Lys Glu Leu Gly  
 130 135 140  
 Ala Gly Phe Phe Tyr Cys Asp Leu Arg Glu Ser Asn Thr Thr Gly Phe  
 145 150 155 160  
 Thr Leu Phe Phe Glu Gly Ser Asn Lys Gly Val Leu Lys Asn His Leu  
 165 170 175  
 Phe Ile Arg Asp Glu  
 180

&lt;210&gt;1157

&lt;211&gt;131

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1157

Met Asn Ile Tyr Gln Phe Ser Pro Gly Ala Ser Pro Asn Trp Gln Ala  
 1 5 10 15  
 Ser Leu Met Ala Gln Leu Asn Ser Tyr Phe Cys Leu Gly Gly Glu Thr  
 20 25 30  
 Val Thr Arg Ile Ile Ser Leu Arg Pro Ser Gly Leu Ile Leu Ala Lys  
 35 40 45  
 Lys Glu Lys Ala Val Val Ser Thr Ala Glu Lys Ile Leu Lys Ile Leu  
 50 55 60  
 Ser Phe Ile Leu Phe Pro Leu Val Leu Ile Ala Leu Ala Ile Arg Tyr  
 65 70 75 80  
 Leu Leu Tyr Asn Lys Phe Asn Lys Asp Leu Asp Arg Ala Val Phe Phe  
 85 90 95  
 Ile Pro Thr Glu Ile Thr Lys Ala Glu Glu Leu Ile Ile Ala Lys Asn  
 100 105 110  
 Ser Cys Ala Ser Glu Arg Ser Gly Ser Asn Cys Phe Ser Ala Leu Leu  
 115 120 125  
 Phe Ser Ser  
 130

&lt;210&gt;1158

&lt;211&gt;111

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1158

Met Leu Gln His Leu Phe Ile Asp Gly Ile Thr Gln Glu Asn Pro Glu  
 1 5 10 15  
 Ala Leu Pro Asn Asn Thr Ser Gly Arg Leu Thr Leu Phe Pro Ser Val  
 20 25 30  
 Arg Tyr Ile Tyr Ser His Phe Thr Pro Gln Asn Pro Thr Ile Trp Pro  
 35 40 45  
 Gln Val Phe Phe Arg Gln Gly Pro Leu Asp Glu Asp Arg Gly Gly Gly  
 50 55 60  
 Phe Glu Ile Leu Glu Gln Leu Gln Glu Leu Gly Val Arg Phe Pro Ile  
 65 70 75 80  
 Cys Pro Ser Gln Gly Pro Asp Asn Pro Asn Phe Gln Gly Phe Gln Gly  
 85 90 95  
 Ile Arg Ile Tyr Trp Glu Asp Ser Tyr Gln Pro Asn Lys Glu Val  
 100 105 110

&lt;210&gt;1159

&lt;211&gt;111

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1159

Met Ser Glu Ser Ile Asn Arg Ser Ile His Leu Glu Ala Ser Thr Pro  
 1 5 10 15  
 Phe Phe Ile Lys Leu Thr Asn Leu Cys Glu Ser Arg Leu Val Lys Ile  
 20 25 30  
 Thr Ser Leu Val Ile Ser Leu Leu Ala Leu Val Gly Ala Gly Val Thr



35 40 45  
 Leu Val Val Leu Phe Val Ala Gly Ile Leu Pro Leu Leu Pro Val Leu  
 50 55 60  
 Ile Leu Glu Ile Ile Leu Ile Thr Val Leu Val Leu Leu Phe Cys Leu  
 65 70 75 80  
 Val Leu Glu Pro Tyr Leu Ile Glu Lys Pro Ser Lys Ile Lys Glu Leu  
 85 90 95  
 Pro Lys Val Asp Glu Leu Ser Val Val Glu Thr Asp Ser Thr Leu  
 100 105 110

&lt;210&gt;1160

&lt;211&gt;75

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1160

Leu Ala Phe Asn Glu Ser Val Arg Ile Tyr Arg Lys Leu Phe Asn Thr  
 1 5 10 15  
 Ala Glu Leu Lys Gln Met Tyr Gly Ala Gly Asp Tyr Glu Gln Gln Asn  
 20 25 30  
 Glu Asp Asn Leu Lys Ser Ile Leu Ser Phe Val Gln Ile Leu Asp Glu  
 35 40 45  
 Lys Asp Gly Phe Asp Asp Phe Leu Ala Thr His Lys Asp Thr Thr Phe  
 50 55 60  
 Ile Gly Arg Gly Gly Ala Asp Ile Phe Cys Ser  
 65 70 75

&lt;210&gt;1161

&lt;211&gt;87

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1161

Met Glu Glu Ala Leu Thr Phe Asp Asp Val Leu Leu Ile Pro Gln Tyr  
 1 5 10 15  
 Ser Glu Ile Leu Pro Ser Glu Val Ser Leu Lys Thr Ala Ile Ser Lys  
 20 25 30  
 Thr Leu Ser Leu Asn Ile Pro Ile Leu Ser Ala Ala Met Asp Ser Val  
 35 40 45  
 Thr Glu Thr Ala Met Ala Leu Ala Leu Ala Gln Glu Gly Gly Leu Gly  
 50 55 60  
 Ile Leu His Lys Asn Met Ser Glu Val Glu Gln Ser Ser Ser Val Arg  
 65 70 75 80  
 Lys Ile Lys Glu Ala Tyr Pro  
 85

&lt;210&gt;1162

&lt;211&gt;91

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1162

Met Asp Phe Ser Val Phe Pro Asp Arg Phe Val Glu Ser Thr Ser Pro  
 1 5 10 15  
 Ser Pro Ile Glu Asp Ile Asp Ala Lys Thr Leu Val Ser Asn Cys Cys  
 20 25 30  
 His Tyr Cys Ser Arg Cys Leu Phe Ile Phe Leu Ser Leu Leu Ser Ile  
 35 40 45  
 Ile Ile Cys Phe Ser Val Tyr Gly Thr Ser Gly Glu Thr Ala Ser Leu  
 50 55 60  
 Val Phe Gly Ile Leu Ser Leu Ile Val Leu Val Leu Leu Ile Ile Glu  
 65 70 75 80  
 Cys Arg Asn Arg Glu Cys Cys Arg Arg Ile Ser  
 85 90

&lt;210&gt;1163

&lt;211&gt;95

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1163

Leu Gln Ala Gly Arg Ser Gly Ile Ile Pro Gly Lys Lys Ala Ile Leu

|   |    |    |    |
|---|----|----|----|
| 1   | 5  | 10 | 15 |
| Leu Asn Val Asn Asp Ala Lys Thr Pro Asn Tyr Ser Cys Ile Phe Glu |    |    |    |
|   | 20 | 25 | 30 |
| Ser Ile Gly Phe Phe Asn Glu Gln Asp Leu Glu Ala Gln His Asn Gln |    |    |    |
|   | 35 | 40 | 45 |
| Gln Ala Ala Leu Val Arg Lys Ile Leu Lys Val Val Pro His His Phe |    |    |    |
|   | 50 | 55 | 60 |
| Leu Lys Gly Leu Ile Ala Lys Leu Pro Arg Ser Leu Lys Lys Asp Arg |    |    |    |
|   | 65 | 70 | 75 |
| Lys Phe Met Ser Ser Leu Ile Phe Thr Lys Leu Ser Tyr Cys Phe     |    |    |    |
|   | 85 | 90 | 95 |

&lt;210&gt;1164

&lt;211&gt;95

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1164

|   |    |    |    |
|---|----|----|----|
| Met Met Lys Ile Lys Lys Ala Ile Ser Arg His Ile Asp Arg Tyr Leu |    |    |    |
| 1   | 5  | 10 | 15 |
| Ser Pro Met Lys Ile Pro Ile Met Ala His Pro Gly Gln Lys Asp Ser |    |    |    |
|   | 20 | 25 | 30 |
| Pro Ser Thr Leu Ser Phe His Phe Pro Leu Ser Tyr Trp Phe Lys Glu |    |    |    |
|   | 35 | 40 | 45 |
| Leu Ser Ser His Gly Phe Leu Val Ser Gly Leu Glu Glu Trp Thr Ser |    |    |    |
|   | 50 | 55 | 60 |
| Ser Lys Thr Ser Thr Gly Lys Arg Ala Lys Ala Glu Asn Leu Cys Arg |    |    |    |
|   | 65 | 70 | 75 |
| Lys Glu Phe Pro Leu Phe Leu Met Ile Ser Cys Ile Lys Ile Lys     |    |    |    |
|   | 85 | 90 | 95 |

&lt;210&gt;1165

&lt;211&gt;238

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1165

|   |     |     |     |
|---|-----|-----|-----|
| Met Glu Asn Leu Ser Ser Ala Pro Ser Arg Ser Ile Trp Lys Ser Ile |     |     |     |
| 1   | 5   | 10  | 15  |
| Ile Gln Asn Lys Met Leu Val Leu Gly Leu Thr Thr Leu Ile Ile Leu |     |     |     |
|   | 20  | 25  | 30  |
| Met Leu Gly Ala Leu Leu Leu Pro Trp Phe Tyr Gln Asp Tyr Glu Gln |     |     |     |
|   | 35  | 40  | 45  |
| Thr Ser Leu Lys Asp Ile Leu Val Ser Pro Cys Ser Arg Phe Pro Phe |     |     |     |
|   | 50  | 55  | 60  |
| Gly Thr Asp Thr Leu Gly Arg Cys Met Phe Ala Arg Thr Leu Arg Gly |     |     |     |
|   | 65  | 70  | 75  |
| Leu Arg Leu Ser Leu Leu Ile Ala Thr Ile Ala Thr Leu Ile Asp Val |     |     |     |
|   | 85  | 90  | 95  |
| Cys Val Gly Leu Leu Trp Ala Thr Val Ala Ile Ser Gly Gly Lys Lys |     |     |     |
|   | 100 | 105 | 110 |
| Ile Asp Phe Leu Met Met Arg Thr Thr Glu Ile Leu Phe Ser Leu Pro |     |     |     |
|   | 115 | 120 | 125 |
| Arg Ile Pro Ile Ile Ile Leu Leu Val Ile Phe His His Gly Leu     |     |     |     |
|   | 130 | 135 | 140 |
| Leu Pro Leu Ile Leu Ala Met Thr Ile Thr Gly Trp Ile Pro Ile Ser |     |     |     |
|   | 145 | 150 | 155 |
| Arg Ile Ile Tyr Gly Gln Phe Leu Leu Leu Lys Asn Lys Pro Phe Val |     |     |     |
|   | 165 | 170 | 175 |
| Leu Ser Ala Lys Ala Met His Ala Ser Thr Phe His Ile Leu Lys Lys |     |     |     |
|   | 180 | 185 | 190 |
| His Leu Leu Pro Asn Thr Leu Ala Pro Ile Ile Ser Thr Leu Ile Phe |     |     |     |
|   | 195 | 200 | 205 |
| Thr Ile Pro Asn Ala Ile Tyr Thr Glu Ala Phe Ile Ser Phe Leu Gly |     |     |     |
|   | 210 | 215 | 220 |
| Leu Gly Ile Gln Pro Pro Gln Ala Lys Pro Arg His Leu Ser         |     |     |     |
|   | 225 | 230 | 235 |

&lt;210&gt;1166

&lt;211&gt;211

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1166

Met Gly Pro Leu Lys Lys Glu Glu Lys Thr Ile Leu Met Ile Phe Phe  
 1 5 10 15  
 Leu Leu Val Val Leu Trp Thr Phe Gly Asp Leu Leu Gly Ile Ser Ala  
 20 25 30  
 Thr Thr Ala Ala Leu Ile Gly Leu Ser Leu Leu Ile Leu Thr Asn Ile  
 35 40 45  
 Leu Asp Trp Gln Lys Asp Val Ile Ala Asn Thr Thr Ala Trp Glu Thr  
 50 55 60  
 Phe Ile Trp Phe Gly Ala Leu Ile Met Met Ala Ser Phe Leu Asn Gln  
 65 70 75 80  
 Leu Gly Phe Ile Pro Leu Val Gly Asp Ser Ala Ala Ala Leu Val Ser  
 85 90 95  
 Gly Leu Ser Trp Lys Ile Gly Phe Pro Leu Leu Phe Leu Ile Tyr Phe  
 100 105 110  
 Tyr Ser His Tyr Leu Phe Ala Ser Asn Thr Ala His Ile Gly Ala Met  
 115 120 125  
 Tyr Pro Ile Phe Leu Ala Val Ser Ile Ser Leu Gly Thr Asn Pro Ile  
 130 135 140  
 Phe Ala Ala Leu Thr Leu Ala Phe Ala Ser Asn Leu Phe Gly Gly Leu  
 145 150 155 160  
 Thr His Tyr Gly Ser Gly Pro Ala Pro Leu Tyr Phe Gly Ser His Leu  
 165 170 175  
 Val Thr Val Gln Glu Trp Trp Arg Ser Gly Phe Ala Leu Ser Ile Val  
 180 185 190  
 Asn Ile Val Ile Trp Ile Gly Ile Gly Ser Leu Trp Trp Lys Ala Leu  
 195 200 205  
 Gly Leu Ile  
 210

&lt;210&gt;1167

&lt;211&gt;81

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1167

Leu Lys Met Glu Thr Tyr Ser Phe Ser Thr Glu Leu Gln Lys Asn Thr  
 1 5 10 15  
 Ser Leu Tyr Ile Met Glu Lys Leu Asp Ser Tyr Phe Ser Phe Gln Gly  
 20 25 30  
 Lys Arg Thr Arg Val Ile Ala Ile Thr Pro Ala Gly Leu Ala Ile Ala  
 35 40 45  
 Tyr Glu Gln Asn Ile His Leu Ser Met Thr Val Lys Ile Leu Lys Val  
 50 55 60  
 Leu Ser Phe Pro Arg Ser Leu Leu Arg Thr Thr Ser Leu Trp Tyr Arg  
 65 70 75 80  
 Pro

&lt;210&gt;1168

&lt;211&gt;228

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1168

Leu Lys Gly Phe Leu Ser Val Asn Glu Leu Ile Phe Gly Phe Gln Thr  
 1 5 10 15  
 Phe Ser Val Val Val Leu Gly Val Phe Phe Ala Ser Arg Gly Lys Ala  
 20 25 30  
 Trp Leu Thr Gly Trp Leu Ser Leu Leu Ser Ser Ile Met Asn Val Phe  
 35 40 45  
 Val Leu Lys Gln Ile His Leu Trp Gly Phe Glu Val Thr Ser Ala Asp  
 50 55 60  
 Val Tyr Val Ile Gly Leu Leu Thr Cys Leu Asn Tyr Ala Arg Glu His  
 65 70 75 80

Tyr Glu Lys Asn Asp Ile Asn Asp Ala Met Leu Cys Ser Trp Val Ile  
 85 95  
 Ser Ile Ala Phe Leu Val Leu Thr Gln Leu His Leu Phe Leu Ile Pro  
 100 105 110  
 Ser Pro Asn Asp Ser Ser Gln Glu His Phe Leu Ala Leu Phe Ser Ser  
 115 120 125  
 Thr Pro Arg Ile Val Val Ala Ser Leu Val Thr Leu Ile Phe Val Gln  
 130 135 140  
 Ile Val Asp Ile Lys Leu Phe Thr Phe Leu Gln Arg Val Phe Ser Lys  
 145 150 155 160  
 Lys Tyr Phe Ala Met Arg Ser Thr Ile Ser Leu Leu Phe Ser Gln Leu  
 165 170 175  
 Ile Asp Thr Ile Ile Phe Ser Phe Leu Gly Leu Tyr Gly Leu Val Ser  
 180 185 190  
 Asn Leu Cys Asp Val Met Ile Phe Ala Met Leu Val Lys Gly Ile Val  
 195 200 205  
 Ile Thr Leu Ala Ile Pro Thr Leu Thr Val Thr Lys Ala Val Leu Asp  
 210 215 220  
 Arg Arg Ser Ser  
 225

&lt;210&gt;1169

&lt;211&gt;189

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1169

Leu Gly Ile Phe Cys Phe Lys Lys Ile Asn Leu Phe Lys Thr Phe Ile  
 1 5 10 15  
 Leu Met Asn Asn Asn Val Tyr Leu Phe Cys Phe Leu Ile Phe Leu Ser  
 20 25 30  
 Lys Lys Val Phe Phe Glu Ser Tyr Glu Asp Phe Ala Asn Val Ala Ser  
 35 40 45  
 Ser Trp Pro Lys Ser Leu Arg Ala Leu Val Gln Gly Arg Tyr Phe Val  
 50 55 60  
 Asp Ser Glu Leu Lys Glu Thr Pro Tyr Arg Ile His Asp Phe Lys Lys  
 65 70 75 80  
 Thr Pro Ile His His Arg Leu Tyr Arg Ser Leu Pro Ile Ile Ser Thr  
 85 90 95  
 Ile Gly Gly Ile Ile Arg Leu Ile Glu Ala His Ser Gly Pro Ile His  
 100 105 110  
 Pro Arg Asp Lys Met Lys Tyr Arg Phe Glu Val Leu Gln Ala Val Ile  
 115 120 125  
 Glu Ile Leu Gly Leu Gly Val Leu Ile Leu Val Phe Asp Ile Ile Gly  
 130 135 140  
 Cys Phe Leu Ala Phe Leu Val Ala Ile Ile Leu Ser Leu Leu Leu Tyr  
 145 150 155 160  
 Cys Asn Ser Thr Phe Thr Cys Val Gln Asn Leu Ser Phe Thr Glu Arg  
 165 170 175  
 Met Leu Glu Gly Ile Gly Glu Ala Val Asn Phe Leu Ala  
 180 185

&lt;210&gt;1170

&lt;211&gt;92

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1170

Val Gly Leu Ser Tyr Trp Asp Ser Gly Phe Val Val Leu Ala Cys Lys  
 1 5 10 15  
 Val Leu Ala Thr Ala Leu Lys Phe Leu Phe Ser Lys Ala Ser Ser Lys  
 20 25 30  
 Ile Lys Gln Met Lys Trp Arg Glu Lys Ala Arg Asn Leu Ala Ala Lys  
 35 40 45  
 Asp Thr Val Gln Ser Ile Lys Glu Phe Cys Ser Val Asp Leu Thr Ser  
 50 55 60  
 Cys Phe Thr Arg Cys Phe Arg Leu Arg Asn Arg Val Val Glu Glu Gly  
 65 70 75 80

Ala Ser Glu Asn Gln Thr Val Arg Glu Ile Ile Val  
85 90

&lt;210&gt;1171

&lt;211&gt;130

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1171

Met Val Asn Arg Tyr Lys Ser Ser Ala Glu Phe Ser Ala Asp His Tyr  
1 5 10 15  
Tyr Asp Asp Asn Leu Val Arg Met Gly Tyr Lys Arg Asn Leu Arg Gly  
20 25 30  
Leu Ala Pro Val Glu Asn Glu Val Cys Leu Phe Glu Glu Asn Asn Leu  
35 40 45  
Leu Glu Ser Val Met Ala Ser Ile Pro Ile Met Gly Ser Ile Leu Gly  
50 55 60  
Leu Gly Arg Leu His Ser Val Trp Ser Thr Gln Asp Pro Lys Asp Ser  
65 70 75 80  
Lys Ile Ser Ile Ile Phe His Thr Ala Leu Gly Ile Leu Glu Thr Leu  
85 90 95  
Gly Leu Gly Ile Ile Val Leu Leu Ile Lys Ile Thr Ile Thr Ile Leu  
100 105 110  
Leu Ile Leu Phe Thr Pro Cys Leu Leu Cys Tyr Phe Met Tyr Ser Cys  
115 120 125  
Cys Leu  
130

&lt;210&gt;1172

&lt;211&gt;125

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1172

Met Thr Lys Asn Ala Ile Asn Ser Gln Thr Thr Thr Pro Gln Pro Asn  
1 5 10 15  
Leu Thr Asp Ala Glu Pro Ile Ala Ser Arg Ala Gln Cys Lys Ser Ile  
20 25 30  
Ala Val Ile Ile Ser Leu Phe Ala Leu Gly Met Leu Leu Leu Cys Leu  
35 40 45  
Gly Ile Ile Leu Ile Ser Ile Pro Ile Pro Gly Leu Ala Ala Gln Val  
50 55 60  
Ala Leu Gly Leu Gly Ile Val Ser Leu Ile Leu Gly Ile Ala Leu Ala  
65 70 75 80  
Asn Ile Gly Phe Leu Cys Leu Leu Leu Arg Cys Lys Gln Phe Pro Lys  
85 90 95  
Asn Pro Ile His Cys Pro Leu Lys Ala Leu Asn Ser Leu Pro Arg Glu  
100 105 110  
Ala Leu Pro Pro His Ser His Gly Lys Leu Glu Asn Phe  
115 120 125

&lt;210&gt;1173

&lt;211&gt;141

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1173

Leu Lys Glu Ile Met Met Ile Asn Phe Ile Arg Ser Tyr Ala Leu Tyr  
1 5 10 15  
Phe Ala Trp Ala Ile Ser Cys Ala Gly Thr Leu Ile Ser Ile Phe Tyr  
20 25 30  
Ser Tyr Ile Leu Asn Val Glu Pro Cys Ile Leu Cys Tyr Tyr Gln Arg  
35 40 45  
Ile Cys Leu Phe Pro Leu Thr Val Ile Leu Gly Ile Ser Ala Tyr Arg  
50 55 60  
Glu Asp Ser Ser Ile Lys Leu Tyr Ile Leu Pro Gln Ala Val Leu Gly  
65 70 75 80  
Leu Gly Ile Ser Ile Tyr Gln Val Phe Leu Gln Glu Ile Pro Gly Met  
85 90 95  
Gln Leu Asp Ile Cys Gly Arg Val Ser Cys Ser Thr Lys Ile Phe Leu

100 105 110  
 Phe Ser Tyr Val Thr Ile Pro Met Ala Ser Val Val Ala Phe Gly Ala  
 115 120 125  
 Ile Val Cys Leu Leu Val Leu Thr Lys Asn Tyr Arg Gly  
 130 135 140  
 <210>1174  
 <211>146  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1174  
 Leu Xaa Ile Glu Gln Glu Asn Phe Ser Phe Lys Phe Lys Lys Ser Ala  
 1 5 10 15  
 Leu Ser Phe Thr Tyr Asn Thr Ala Asn Leu Thr Lys Ser Thr Phe Thr  
 20 25 30  
 Phe Ile Leu Leu Leu Leu Leu Arg Lys Lys Asp Gln Gly Leu Arg Phe  
 35 40 45  
 Met Asp Lys Glu Thr Leu Glu Asn Ile Tyr Arg His Phe Arg Tyr Arg  
 50 55 60  
 Phe Leu Lys Leu Asn Ile Leu Pro Ala Phe Leu Gly Leu Leu Leu Leu  
 65 70 75 80  
 Cys Ser Pro Asn Thr Leu Asn Tyr Thr Glu Val Asp Val Ile Phe Ser  
 85 90 95  
 Asp Arg Leu Cys Ser Cys Leu Leu Ile Phe Leu Als Ile Ala Ser Leu  
 100 105 110  
 Thr Lys Arg Ser Leu Leu Trp Leu Gly Ala Pro Leu Gly Ile Trp Val  
 115 120 125  
 Thr Leu Phe Ala Cys Val Ala Asp Asp Leu Leu Leu Phe Leu Gln Met  
 130 135 140

Ile Leu

145

&lt;210&gt;1175

&lt;211&gt;95

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1175

Leu Leu Val Phe Val Lys Val Asn Ser Ser Met Gly Leu Pro Thr Phe  
 1 5 10 15  
 Pro Xaa Xaa Phe Leu Asn Ile Cys Cys Trp Phe Ile Ile Val Leu Phe  
 20 25 30  
 Ile Leu Ala Phe Ala Glu Ser Leu Arg His Leu Arg Trp Met Asn Leu  
 35 40 45  
 Ile Phe Ser Ala Ala Ile Leu Phe Ser Pro Val Leu Phe His Ile Pro  
 50 55 60  
 Val Glu Ser Pro Met Phe Leu Pro Ile Ile Val Thr Gly Leu Ile Leu  
 65 70 75 80  
 Ile Ile Leu Ser Ile Gly Lys Arg Arg Arg Thr Lys Arg Lys Leu  
 85 90 95

&lt;210&gt;1176

&lt;211&gt;85

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1176

Leu Val Tyr Phe Met Val Phe Ser Pro Ser Ser Glu Ser Val Val Lys  
 1 5 10 15  
 Ala Asn Ser Val Val Arg Ser Asn Phe Cys Tyr Phe Leu Glu Asn Lys  
 20 25 30  
 Phe Val Ser Pro Ser Glu Ser Thr Glu Val Met Phe Ser Glu Ile Met  
 35 40 45  
 Lys Gly Arg Val Pro Asp Ile Glu Ser Leu Phe Asp Arg Pro Thr Asp  
 50 55 60  
 Met Met Met Thr Gly Phe Lys Xaa Arg Arg Ile Trp Gly Ile Cys Ser  
 65 70 75 80  
 Ile Ala Ser Glu Tyr  
 85

&lt;210&gt;1177

&lt;211&gt;114

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1177

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Met Leu Tyr Pro Val Ile Ala Val Val Cys Ala Val Val Ser Val Val
 1           5           10           15
Leu Leu Ile Leu Lys Val Leu Phe Leu Leu Ser Phe Pro Phe Lys
      20           25           30
Leu Cys Ser Ala Ser Ser Ala Leu Pro Gly Glu Arg Val Ser Leu Gly
      35           40           45
Ser His Phe Lys Cys Leu Tyr Gly Gly Gly Leu Pro Tyr Leu Leu Ala
      50           55           60
Cys Leu Leu Ile Val Pro Val Ile Gly Thr Ala Ile His Gly Phe Ile
      65           70           75           80
Ile Ser His Arg Thr Ser Glu Asp Ala Arg Leu Ser Ser Ala Ile Val
      85           90           95
Phe Met Gln Ala Pro Ile Leu Gln Leu Ala Gly Met Ser Gly Leu Ile
      100           105           110
Lys Pro

```

&lt;210&gt;1178

&lt;211&gt;79

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1178

```

Leu Phe Phe Tyr Ile Tyr Ser Ile Leu Lys Arg Tyr Ile Val Val Leu
 1           5           10           15
Gly Lys Ile Leu Gly Leu Ile Thr Ile Gln Phe Tyr Gln Asn Leu Gly
      20           25           30
Gly Met Ser Ser Glu Arg Tyr Ser Ala Leu His Ser Arg Lys Ser Leu
      35           40           45
Ser Val Leu Pro His Val Val Arg Lys Val Leu Leu Ser Phe Pro Asp
      50           55           60
Phe Arg Gly Asn Gly Asp Val Asn Leu Arg Asn Ile Arg Ser Asp
      65           70           75

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&lt;210&gt;1179

&lt;211&gt;163

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1179

```

Leu Lys Ala Lys Ala Tyr Leu Asp Lys Gly Ala Phe Val Pro Ser Asp
 1           5           10           15
Phe Val Trp Glu Ile Leu Lys Glu Lys Leu Gln Ser Gln Ala Cys Ser
      20           25           30
Lys Gly Cys Ile Ile Asp Gly Phe Pro Arg Thr Leu Asp Gln Ala His
      35           40           45
Leu Leu Asp Ser Phe Leu Met Asp Val His Ser Asn Tyr Thr Val Ile
      50           55           60
Phe Leu Glu Ile Ser Glu Asp Glu Ile Leu Lys Arg Val Cys Ser Arg
      65           70           75           80
Phe Leu Cys Pro Ser Cys Ser Arg Ile Tyr Asn Thr Ser Gln Gly His
      85           90           95
Thr Glu Cys Pro Asp Cys His Val Pro Leu Ile Arg Arg Ser Asp Asp
      100           105           110
Thr Pro Glu Ile Ile Lys Glu Arg Leu Thr Lys Tyr Gln Glu Arg Thr
      115           120           125
Ala Pro Val Ile Ala Tyr Tyr Asp Ser Leu Gly Lys Leu Cys Arg Val
      130           135           140
Ser Ser Glu Asn Lys Glu Asp Leu Val Phe Glu Asp Ile Leu Lys Cys
      145           150           155           160
Ile Tyr Lys

```

&lt;210&gt;1180

&lt;211&gt;128

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1180

```

Met Ser Gln Cys Gln Ser Ser Ser Thr Ser Thr Trp Glu Trp Met Lys
 1          5          10          15
Ser Phe Val Pro Asn Tyr Lys Asn Pro Thr Pro Pro Leu Ser Pro Ile
          20          25          30
Pro Ser Glu Asp Glu Phe Ile Leu Ala Tyr Glu Pro Phe Val Leu Pro
          35          40          45
Lys Thr Asp Pro Glu Asn Ala Gln Ala Asn Pro Pro Gly Thr Ser Thr
          50          55          60
Pro Asn Val Glu Asn Gly Ile Asp Asp Leu Asn Pro Leu Leu Gly Gln
          65          70          75          80
Pro Asn Glu Gln Asn Asn Ala Asn Asn Pro Gly Thr Ser Gly Ser Asn
          85          90          95
Pro Thr Ser Leu Pro Ala Pro Glu Arg Leu Pro Glu Thr Glu Glu Asn
          100          105          110
Ser Gln Glu Glu Glu Gln Gly Ser Gln Asn Asn Glu Asp Leu Ile Gly
          115          120          125

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&lt;210&gt;1181

&lt;211&gt;94

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1181

```

Leu Lys Ser Met Leu Asp Pro Lys Lys His Ser Thr Leu Gly Ile Glu
 1          5          10          15
Ile Ser Ser Glu Thr Ala Glu Thr Ile Glu Ser Cys Ser Leu Gly Leu
          20          25          30
Ile Ser Ile Asn Leu Leu Leu Ser Gly Leu Cys Leu Arg Ser Ser His
          35          40          45
Asp Arg Ser Gln Ala Val Lys Ile Ile Gln Gln Phe Cys Pro Gln Phe
          50          55          60
Ser Ser Glu Glu Val Gln Asn Phe Val Glu Gln Arg Asn Ile Leu Leu
          65          70          75          80
His Phe Tyr Ile Ile Cys Leu Lys Gly Thr Lys Ser Pro Cys
          85          90

```

&lt;210&gt;1182

&lt;211&gt;314

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1182

```

Met Asn Lys Lys His Ala Ser Phe Ser Ser Arg Leu Gly Phe Ile Phe
 1          5          10          15
Ser Met Ile Gly Ile Ala Val Gly Ala Gly Asn Ile Trp Arg Phe Pro
          20          25          30
Arg Val Ala Ala Gln Asn Gly Gly Gly Ala Phe Leu Ile Leu Trp Leu
          35          40          45
Cys Phe Leu Phe Leu Trp Ser Ile Pro Leu Ile Ile Ile Glu Leu Ser
          50          55          60
Ile Gly Lys Leu Thr Lys Lys Ala Pro Ile Gly Ala Leu Ile Lys Thr
          65          70          75          80
Ala Gly Lys Lys Phe Ala Trp Ala Gly Gly Phe Ile Thr Leu Val Thr
          85          90          95
Thr Cys Ile Leu Ala Tyr Tyr Ser Thr Ile Val Gly Trp Gly Leu Ser
          100          105          110
Tyr Phe Tyr Tyr Ala Val Ser Gly Lys Ile His Leu Gly Asn Asp Phe
          115          120          125
Ala Lys Leu Trp Thr Ser His Tyr Gln Ser Ser Ile Pro Leu Trp Ala
          130          135          140
His Leu Thr Ser Leu Gly Leu Ala Tyr Leu Val Ile Arg Lys Gly Ile
          145          150          155          160
Val His Gly Ile Glu Lys Cys Asn Lys Ile Leu Ile Pro Ala Phe Phe
          165          170          175

```



Leu Cys Thr Ile Ala Leu Leu Leu Arg Ala Val Thr Leu Gly Ala  
 180 185 190  
 Val Gln Gly Ile Lys Gln Leu Phe Ser Cys Asp Lys Ser Cys Phe Ser  
 195 200 205  
 Asn Tyr Lys Val Trp Ile Glu Ala Leu Thr Gln Asn Ala Trp Asp Thr  
 210 215 220  
 Gly Ala Gly Trp Gly Leu Leu Leu Val Tyr Ala Gly Phe Ala Ser Lys  
 225 230 235 240  
 Lys Thr Gly Val Val Ser Asn Gly Ala Leu Thr Ala Ile Cys Asn Asn  
 245 250 255  
 Leu Val Ser Leu Ile Met Gly Asp His Tyr Leu Phe His Met Cys Phe  
 260 265 270  
 Phe Arg His Phe Arg Asn His Ala Ala Thr Arg Trp Ser Arg Ser Xaa  
 275 280 285  
 Lys His Arg Asp Tyr Leu Tyr Leu Pro Thr Arg Val Ile Tyr Pro Phe  
 290 295 300  
 Ala Trp Arg Asn Leu Ser Asn His Pro Val  
 305 310

&lt;210&gt;1183

&lt;211&gt;132

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1183

Met Arg Ala Glu Met Ala Val Ile Tyr Trp Asp Arg Ser Lys Ile Val  
 1 5 10 15  
 Trp Ser Phe Glu Pro Trp Ser Leu Arg Leu Thr Trp Tyr Gly Val Phe  
 20 25 30  
 Phe Thr Val Gly Ile Phe Leu Ala Cys Leu Ser Ala Arg Tyr Leu Ala  
 35 40 45  
 Leu Ser Tyr Tyr Gly Leu Lys Asp His Leu Ser Phe Ser Lys Ser Gln  
 50 55 60  
 Leu Arg Val Ala Leu Glu Asn Phe Phe Ile Tyr Ser Ile Leu Phe Ile  
 65 70 75 80  
 Val Pro Gly Ala Arg Leu Ala Tyr Val Ile Phe Tyr Gly Trp Ser Phe  
 85 90 95  
 Tyr Leu Gln His Pro Glu Glu Ile Ile Gln Ile Trp His Gly Gly Leu  
 100 105 110  
 Ser Ser His Gly Gly Val Leu Trp Leu Ser Phe Val Gly Gly His Phe  
 115 120 125  
 Phe Leu Asp Ile  
 130

&lt;210&gt;1184

&lt;211&gt;171

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1184

Met Ser Val His Ile Thr Pro Arg Lys Cys Phe Ile Leu Cys Ile Leu  
 1 5 10 15  
 Ser Met Phe Thr Leu Pro Thr Leu Phe Pro Lys Ala His Leu Ile Leu  
 20 25 30  
 Phe Ser Pro Tyr Ile Val Leu Cys Phe Tyr Cys Phe Ser Lys Asp Lys  
 35 40 45  
 Gly Leu Val Leu Ala Leu Gly Cys Gly Val Leu Ser Asp Leu Ala Leu  
 50 55 60  
 Gly Ser Arg Gly Val Phe Leu Leu Leu Tyr Pro Leu Thr Ala Leu Ile  
 65 70 75 80  
 Thr His Lys Ala His Leu Ile Phe Ser Lys Glu Ser Lys Ala Ala Leu  
 85 90 95  
 Val Ile Val Asn Met Ile Phe Tyr Gly Val Phe Leu Leu Leu Thr Ile  
 100 105 110  
 Pro Met Cys Ala Leu Phe Gly His Glu Val Arg Trp Ser Ile Asp Val  
 115 120 125  
 Leu Met Ile Pro Leu Lys Cys Ser Phe Leu Asp Asn Leu Ile Phe Thr  
 130 135 140

Ser Val Ile Tyr Ile Leu Pro Cys Ala Ile Asn Ser Gly Ile His Lys  
 145 150 155 160  
 Met Ile Ser Phe Phe Arg Arg Leu Val Cys Tyr  
 165 170

&lt;210&gt;1185

&lt;211&gt;205

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1185

Met Phe Met Lys Ile Cys Ser Leu Lys Leu Lys Asn Phe Arg Asn His  
 1 5 10 15  
 Ser Asp Leu Glu Ile Ser Leu Ala Pro Lys Leu Asn Tyr Ala Gln Gly  
 20 25 30  
 Lys Thr Asn Leu Leu Glu Ala Leu Tyr Val Leu Ser Leu Gly Arg Ser  
 35 40 45  
 Phe Arg Thr Gln His Leu Thr Asp Thr Ile Thr Phe Gly Ser Ser His  
 50 55 60  
 Phe Phe Leu Glu Thr Gln Phe Glu Lys Asp His Leu Pro Gln Ala Leu  
 65 70 75 80  
 Ser Ile Tyr Thr Asp Lys Gln Gly Lys Lys Ile Cys Tyr Asn Gln Leu  
 85 90 95  
 Pro Ile Lys Thr Leu Ser Gln Leu Ile Gly Lys Val Pro Ile Val Leu  
 100 105 110  
 Phe Ser Ser Lys Asp Arg Leu Leu Ile Ser Gly Ala Pro Ala Asp Arg  
 115 120 125  
 Arg Leu Phe Leu Asn Leu Leu Leu Ser Gln Cys Asp Asn His Tyr Thr  
 130 135 140  
 Leu Cys Leu Ser Tyr Tyr His Arg Ala Leu Gln Gln Arg Asn Ala Leu  
 145 150 155 160  
 Leu Lys Ser Lys Gln Thr Ser Thr Val Ala Ser Gly Met Asn Ser Trp  
 165 170 175  
 Ser Asn Thr Ala Pro Thr Tyr Pro Ser Asn Gly Phe Ser Val Val Arg  
 180 185 190  
 Asn Phe Gln Ile Tyr Pro Lys Asn Phe Gly Leu Thr Thr  
 195 200 205

&lt;210&gt;1186

&lt;211&gt;81

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1186

Leu Arg Phe Arg Asn Ile Lys Lys Ser Leu Ile Phe Ile Lys Arg Ile  
 1 5 10 15  
 Arg Tyr Ser Gln Ser Gly Lys Glu Gln Lys Gly Ala Arg Pro Phe Phe  
 20 25 30  
 Lys Lys Ser Ile Thr Ser Ser Leu Val Ile Leu Leu Leu Glu Ala Ile  
 35 40 45  
 Phe Asn Glu Asn Phe Ser Ser Ile Ile Gln Asn Asn Phe Asn Lys Asn  
 50 55 60  
 Phe Lys Asn Lys Asn Ile Ser Ile Asn Arg Ile Phe Val Lys Phe Thr  
 65 70 75 80  
 Ile

&lt;210&gt;1187

&lt;211&gt;79

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1187

Val Gln Leu Phe Gln Tyr Met Asn Glu Ser Gly Trp Asp Trp Leu Cys  
 1 5 10 15  
 Asp Phe Asp Ser Gln Gly Glu Gly Phe Gln Leu Ser Arg Leu Val Gly  
 20 25 30  
 Leu Leu His Ser Ser Trp Ala Leu Tyr Glu Ala Lys Glu Gln Phe Tyr  
 35 40 45  
 Leu Pro Gln Val Ser Leu Leu Thr Trp Glu Glu Leu Ile Glu Met Gln

50 55 60  
 Phe Val Lys Gln Thr Asn Lys Thr Arg Gly Cys Lys Arg Ser Leu  
 65 70 75  
 <210>1188  
 <211>119  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1188  
 Met Pro Val Ser Ser Ala Pro Leu Pro Thr Ser His Arg Pro Ser Ser  
 1 5 10 15  
 Gly Asn Leu Gly Leu Met Glu Pro Asn Ser Lys Ala Leu Lys Ala Lys  
 20 25 30  
 His Gln Asp Lys Thr Thr Lys Thr Ile Lys Leu Leu Val Lys Ile Leu  
 35 40 45  
 Val Ala Ile Leu Val Ile Glu Val Leu Gly Ile Ile Ala Ala Phe Phe  
 50 55 60  
 Ile Pro Gly Thr Pro Pro Ile Cys Leu Ile Ile Leu Gly Gly Leu Ile  
 65 70 75 80  
 Leu Thr Thr Val Leu Cys Val Leu Leu Leu Val Ile Lys Leu Ala Leu  
 85 90 95  
 Val Asn Lys Thr Glu Gly Thr Thr Ala Glu Gln Gln Ile Lys Arg Lys  
 100 105 110  
 Leu Ser Ser Lys Ser Ile Ser  
 115  
 <210>1189  
 <211>105  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1189  
 Met Ser Ser Pro Val Val Thr Gly Thr Ser Ser Ala Ser Pro Val Glu  
 1 5 10 15  
 Gln Thr Lys Leu Gly Glu Phe Leu Glu Arg Leu Ser Gly Ser Gly Arg  
 20 25 30  
 Cys Ile Lys Ile Ala Phe Ala Ala Ser Thr Ala Leu Leu Leu Leu Asn  
 35 40 45  
 Thr Phe Val Ser Gly Ile Val Ala Ile Ala Met Ile Phe Val Ala Thr  
 50 55 60  
 Ser Val Gly Ala Tyr Phe Thr Val Ile Gly Pro Leu Phe Leu Leu Ser  
 65 70 75 80  
 Leu Ile Leu Leu Ala Ile Met Leu Ile Ser Met Tyr Lys Ile Thr His  
 85 90 95  
 Pro Ser Gln Asn Thr Pro Ile Ser Asn  
 100 105  
 <210>1190  
 <211>162  
 <212>PRT  
 <213>Chlamydia pneumoniae  
 <400>1190  
 Met Leu Cys Thr Cys Ser Arg Ile Gln Asp Gly Asn Pro Trp Met Lys  
 1 5 10 15  
 Ser Glu Arg Leu Lys Lys Leu Glu Ser Glu Leu His Asp Leu Thr Gln  
 20 25 30  
 Trp Met Gln Leu Gly Leu Val Pro Lys Lys Glu Ile Ser Arg His Gln  
 35 40 45  
 Glu Glu Ile Arg Ile Leu Glu His Lys Ile Tyr Glu Glu Lys Glu Arg  
 50 55 60  
 Leu Gln Leu Leu Lys Glu Asn Gly Glu Ile Glu Glu Tyr Val Thr Pro  
 65 70 75 80  
 Arg Arg Ser Pro Ala Lys Thr Val Tyr Pro Asp Gly Pro Ser Met Ser  
 85 90 95  
 Asp Ile Glu Phe Val Glu Pro Thr Glu Thr Glu Il Asp Ile Asp Pro  
 100 105 110  
 Gly Glu Thr Val Glu Leu Glu Leu Thr Asp Glu Gly Arg Glu Asp Gly  
 115 120 125

Ala Val Glu Val Asp Tyr Ser His Glu Asp Asp Glu Asp Pro Phe Ser  
 130 135 140  
 Asp Arg Asn Arg Trp Arg Arg Gly Gly Ile Ile Asp Pro Asp Ala Asn  
 145 150 155 160  
 Glu Trp

&lt;210&gt;1191

&lt;211&gt;83

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1191

Leu Val Ile Gln Ile Gly Val Leu Pro Pro Leu Val Ala Thr Lys Lys  
 1 5 10 15  
 Ile Asp Ile Asn Arg Phe Met Gln Asp Ala Asp Asn Trp Ile Pro Met  
 20 25 30  
 Phe Ser His Pro Phe Phe Leu Arg Glu Lys Thr Leu Ser Asp Gly Lys  
 35 40 45  
 Asp Ile His Ile Leu Ser Arg Leu Lys Gly Leu Gln Thr Cys Ala Pro  
 50 55 60  
 Cys Ser Pro His Glu Glu Arg Thr Ile Thr Leu Leu Ser His Ser Asn  
 65 70 75 80  
 Ser Val Ser

&lt;210&gt;1192

&lt;211&gt;95

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1192

Met Asn Lys Ser Arg Phe Leu Arg Leu Cys Cys Cys Leu Cys Phe Cys  
 1 5 10 15  
 Gly Ser Leu Phe Tyr Phe Tyr Ile Asn Lys Gln Asn Ser Leu Thr Lys  
 20 25 30  
 Leu Arg Leu Glu Ile Pro Cys Leu Ser Val Arg Leu Arg Gln Leu Glu  
 35 40 45  
 Gln Gln Asn Ile Ser Leu Arg Phe Leu Ile Asp Lys Ile Glu Arg Pro  
 50 55 60  
 Asp His Leu Met Glu Ile Ala Ala Leu Pro Glu Tyr Gln Tyr Leu Glu  
 65 70 75 80  
 Tyr Pro Ser Glu Glu Ser Ile Ser Leu Leu Ser Tyr Glu Leu Pro  
 85 90 95

&lt;210&gt;1193

&lt;211&gt;101

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1193

Met Asp Pro Ala Ser Pro Val Ala Pro His Val Leu Gln Asp His Val  
 1 5 10 15  
 Gln Leu Ser Ser Glu Glu Leu Ser Ala Leu Ser Ser Gly Val Ser Arg  
 20 25 30  
 Val Lys Lys Leu Thr Ile Ala Ile Met Val Leu Ser Leu Ile Ala Ile  
 35 40 45  
 Ser Leu Val Ala Cys Gly Leu Phe Leu Thr Gly Ser Ala Pro Leu Gln  
 50 55 60  
 Leu Ser Ile Trp Ile Ala Ala Ser Cys Ile Thr Leu Ser Met Leu Val  
 65 70 75 80  
 Cys Ala Cys Trp Arg Tyr Lys Ile Ser Asn Ala Leu Glu Lys Thr Lys  
 85 90 95  
 Val Ala His Glu Ser  
 100

&lt;210&gt;1194

&lt;211&gt;77

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1194

Val Met Trp Tyr Ser Asp Tyr His Val Trp Ile Leu Pro His Glu  
 1 5 10 15  
 Arg Val Val Arg Leu Gly Leu Thr Glu Lys Met Gln Lys Asn Leu Gly  
 20 25 30  
 Ala Ile Leu His Val Asp Leu Pro Ser Val Gly Ser Leu Cys Lys Glu  
 35 40 45  
 Gly Glu Val Leu Val Ile Leu Glu Ser Ser Lys Ser Ala Ile Arg Gly  
 50 55 60  
 Val Lys Ser Cys Ile Arg Arg Gly Tyr Arg Tyr Gln Pro  
 65 70 75

&lt;210&gt;1195

&lt;211&gt;172

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1195

Met Gly Phe Lys Asn Ile Cys Lys Gln Gly Ser Gln Leu Tyr Leu Asn  
 1 5 10 15  
 Gly Ile Phe Pro Glu Arg Ile Leu Ala Arg Lys Leu Lys Asn Cys Ala  
 20 25 30  
 Lys Ser Tyr Pro Arg Thr Ala Leu Thr Ile Glu Val Leu Val Ser Ser  
 35 40 45  
 Val Leu Gly Ala Leu Lys Val Ile Leu Ile Pro Cys Ala Ser Thr Tyr  
 50 55 60  
 Ala Ala Leu Thr Leu Pro Leu Arg Ala Leu Phe Asn Ala Ile Lys Thr  
 65 70 75 80  
 Lys Ser Cys Gln His Leu Ala Ser Tyr Ala Met Ala Trp Leu Leu His  
 85 90 95  
 Ile Leu Thr Ile Ala Val Ile Ile Gly Leu Val Phe Ser Leu Val Phe  
 100 105 110  
 Ile Pro Pro Pro Val Val Phe Ile Ser Leu Gly Leu Leu Met Ser Val  
 115 120 125  
 Thr Thr Ser Val Thr Leu Phe Gln Val His Lys Asn Leu Phe Pro Pro  
 130 135 140  
 Tyr Glu Pro Pro Pro Ser Arg Pro His Thr Pro Pro Phe Ala Asp  
 145 150 155 160  
 Glu Tyr Val Pro Leu Ile Ser Glu Ser Tyr Phe Asp  
 165 170

&lt;210&gt;1196

&lt;211&gt;224

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1196

Val Thr Pro Ser Ala Asp Arg Ala Lys Lys Ile Ala Val Glu Lys Lys  
 1 5 10 15  
 Lys Asp Leu Ser Ala Ser Ala Arg Met Glu Glu His Glu Ala Ser Gln  
 20 25 30  
 Arg Gln Asp Ala Arg His Arg Arg Ile Gly Arg Glu Ala Gln Gly Ser  
 35 40 45  
 Phe Phe Tyr Ser Ser Arg Asn Pro Glu His Arg Arg Ser Phe Gly Ser  
 50 55 60  
 Leu Ser Arg Phe Lys Thr Lys Pro Ser Asp Ala Ala Ser Thr Arg Pro  
 65 70 75 80  
 Ala Ser Ile Ser Pro Pro Phe Lys Asp Asp Phe Gln Pro Tyr His Phe  
 85 90 95  
 Lys Asp Leu Arg Ser Ser Ser Phe Gly Ser Gly Ala Ser Ser Ala Phe  
 100 105 110  
 Thr Pro Ile Met Pro Ala Ser Ser Arg Ser Pro Asn Phe Ser Thr Gly  
 115 120 125  
 Thr Val Leu His Pro Glu Pro Val Tyr Pro Lys Gly Gly Lys Glu Pro  
 130 135 140  
 Ser Ile Pro Arg Val Ser Ser Ser Ser Arg Arg Ser Pro Arg Asp Arg  
 145 150 155 160  
 Gln Asp Lys Gln Gln Gln Gln Asn Gln Asp Glu Glu Gln Lys Gln  
 165 170 175

Gln Ser Lys Lys Lys Ser Gly Lys Ser Asn Gln Ser Leu Lys Thr Pro  
 180 185 190  
 Pro Pro Asp Gly Lys Ser Thr Ala Asn Leu Ser Pro Ser Asn Pro Phe  
 195 200 205  
 Ser Asp Gly Tyr Asp Gln Arg Gln Lys Arg Lys His Arg Lys Asn Lys  
 210 215 220

&lt;210&gt;1197

&lt;211&gt;139

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1197

Leu Ile Lys Lys Arg Ala Ile Phe Glu Arg Met Phe Pro Ile Pro Pro  
 1 5 10 15  
 Pro His Cys Pro Pro Asn Asn Lys Asn Asn Phe Tyr His Leu Thr Thr  
 20 25 30  
 Asp Thr Lys Asp Pro Leu Leu Leu Arg Ile Leu Arg Thr Ile Gly Tyr  
 35 40 45  
 Val Leu Leu His Ile Ile Thr Leu Gly Leu Leu Leu Ile His Tyr  
 50 55 60  
 Tyr Lys His His Arg Val Val Arg Lys Glu Gly Leu Pro Thr Pro Pro  
 65 70 75 80  
 Thr Leu Pro Lys Gly Pro Glu Pro Lys Thr Ile Glu Ile Ala Lys Gln  
 85 90 95  
 Pro Pro Lys Asp Gly Glu Asp Lys Lys Pro Asp Val Pro Lys Pro Gly  
 100 105 110  
 Thr Pro Pro Pro Glu Asp Thr Pro Pro Pro Pro Lys Ala Pro Ser  
 115 120 125  
 Pro Ala Ser Pro Lys Val Pro Lys Thr Thr Cys  
 130 135

&lt;210&gt;1198

&lt;211&gt;79

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1198

Val Val Glu Ser Ala Phe Tyr Gln Gln Val Val Leu Gly Thr Phe Gly  
 1 5 10 15  
 Leu Ala Gly Glu Gly Ala Leu Gly Gly Gly Gly Val Ser Ser Gly  
 20 25 30  
 Gly Gly Val Pro Gly Leu Gly Thr Ser Gly Phe Leu Ser Ser Pro Ser  
 35 40 45  
 Leu Gly Gly Cys Leu Ala Ile Ser Ile Val Phe Gly Ser Gly Pro Leu  
 50 55 60  
 Gly Arg Val Gly Gly Val Gly Lys Pro Ser Phe Leu Thr Thr Arg  
 65 70 75

&lt;210&gt;1199

&lt;211&gt;90

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1199

Leu Asp Asp Ser Trp Ile Leu Glu Val Lys Val Thr Pro Lys Ala Lys  
 1 5 10 15  
 Glu Asn Lys Ile Val Gly Phe Asp Gly Gln Ala Leu Lys Val Arg Val  
 20 25 30  
 Thr Glu Pro Pro Glu Lys Gly Lys Ala Asn Asp Ala Val Ile Ser Leu  
 35 40 45  
 Leu Ala Lys Ala Leu Ser Leu Pro Lys Arg Asp Val Thr Leu Ile Ala  
 50 55 60  
 Gly Glu Thr Ser Arg Lys Lys Lys Phe Leu Leu Pro Asn Arg Val Gln  
 65 70 75 80  
 Asp Ile Ile Phe Ser Leu His Ile Asp Val  
 85 90

&lt;210&gt;1200

&lt;211&gt;107

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1200

Leu Gln Asn Ser Met His Lys Val Phe Ala Asp Pro Ser Leu Thr Asp  
 1 5 10 15  
 Thr Ile Thr Leu Pro Ile Asp Ala Pro Gly Asp Pro Ala Tyr Pro His  
 20 25 30  
 Val Leu Gly Glu Ala Phe Ile Ser Pro Gln Ala Ala Leu Arg Phe Leu  
 35 40 45  
 Glu Asn Thr Ser Pro Asn Gln Glu Asp Ile Tyr Glu Glu Ile Ser Arg  
 50 55 60  
 Tyr Leu Val His Ser Ile Leu His Met Leu Gly Tyr Asp Asp Thr Ser  
 65 70 75 80  
 Ser Glu Glu Lys Arg Lys Met Arg Val Lys Glu Asn Gln Ile Leu Cys  
 85 90 95  
 Met Leu Arg Lys Lys His Ala Leu Leu Thr Ala  
 100 105

&lt;210&gt;1201

&lt;211&gt;279

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1201

Met Ser Ser Leu Leu Ser Cys Gly Arg Ile Glu Pro Thr Arg Val Thr  
 1 5 10 15  
 Cys Ser Leu Lys Thr Tyr Leu Glu Asp Thr Ser Gln Asn Gln Leu Ser  
 20 25 30  
 Thr Arg Leu Val Arg Ala Ser Val Ile Phe Leu Cys Ala Leu Leu Ile  
 35 40 45  
 Ile Leu Val Cys Val Ala Leu Ser Ser Leu Ile Pro Ser Ile Met Ala  
 50 55 60  
 Leu Ala Thr Ser Phe Thr Val Met Gly Leu Ile Leu Phe Val Met Ser  
 65 70 75 80  
 Leu Leu Gly Asp Val Ala Ile Ile Ser Tyr Leu Thr Tyr Ser Thr Val  
 85 90 95  
 Thr Ser Tyr Arg Gln Asn Lys Arg Ala Phe Glu Ile His Lys Pro Ala  
 100 105 110  
 Arg Ser Val Tyr Tyr Glu Gly Val Arg His Trp Asp Leu Gly Arg Ser  
 115 120 125  
 Ser Leu Gly Thr Gly Glu Ile Pro Ile Val Arg Thr Leu Phe Ser Pro  
 130 135 140  
 Phe Gln Asn His Gly Leu Asn His Ala Leu Ala Ala Lys Ile Phe Leu  
 145 150 155 160  
 Phe Met Glu His Phe Ser Pro Glu Pro Pro Asn Glu Pro Leu Val Asp  
 165 170 175  
 Trp Ala Cys Leu Ile Arg Asp Phe Arg Pro His Val Ser Ser Leu Cys  
 180 185 190  
 Phe Val Ile Glu Lys Gln Gly Ser Ser Leu Arg Thr Lys Glu Gly Asn  
 195 200 205  
 Thr Ile Cys Glu Ala Phe Arg Ser Asp Tyr Asp Ala His Phe Ala Met  
 210 215 220  
 Val Asp Cys Tyr Arg Leu Ile His Ser Lys Leu Ile Ile Glu Lys Met  
 225 230 235 240  
 Gly Leu Lys Asn Ile Asp Ile Ile Pro Ser Val Met Val Arg Glu Asp  
 245 250 255  
 Tyr Pro Ser Arg Pro Gly Glu Gly Tyr Arg Glu Gly Leu Leu Arg Net  
 260 265 270  
 Tyr Gly Gly Lys Gly Ala Leu  
 275

&lt;210&gt;1202

&lt;211&gt;239

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1202

Leu Lys Val Gln Lys Leu Arg Gln Pro Ser Phe Tyr Pro Lys Arg Leu  
 1 5 10 15

Met Thr Leu Tyr Leu Gly Leu Asn Gln Lys Thr Ala Arg Lys Tyr Gln  
 20 25 30  
 Ala His Tyr Leu Pro Ile Leu Thr Leu Phe Pro Tyr Ala Lys Ser Thr  
 35 40 45  
 Pro Gln Asn Lys Arg Ala Leu Gln Phe Leu Pro Gln Ala Thr His Val  
 50 55 60  
 Ile Leu Thr Ser Pro Ser Ser Thr His Leu Phe Leu Ser Arg Met Thr  
 65 70 75 80  
 Ser Leu Leu Ser Lys Ala Thr Leu Lys Thr Lys Thr Tyr Leu Cys Ile  
 85 90 95  
 Gly Glu Ser Thr Lys Glu Arg Leu Leu Ser Phe Leu Gly Gln Val Lys  
 100 105 110  
 Tyr Val Val Ala Thr Gln Glu Ile Ala Glu Gly Ile Phe Pro Leu Leu  
 115 120 125  
 Gln Ala Leu Pro Ser Ser Ala Arg Ile Leu Tyr Pro His Ser Ser Leu  
 130 135 140  
 Ala Arg Pro Val Ile Arg Glu Phe Leu Tyr Asn Arg Phe Thr Phe Phe  
 145 150 155 160  
 Ser Tyr Pro His Tyr Thr Val Lys Pro Arg Lys Leu Lys Lys Asn Ile  
 165 170 175  
 Leu Ser Lys Tyr Lys Lys Ile Ile Phe Thr Ser Pro Ser Thr Val Arg  
 180 185 190  
 Ala Phe Ala Lys Ile Phe Pro Arg Phe Pro Glu Lys Thr Tyr Trp Cys  
 195 200 205  
 Gln Gly Arg Met Thr Leu Gln Glu Phe Gln Lys Phe Ser Ser Gln Lys  
 210 215 220  
 Gln Val Ser Leu Leu Glu Thr Leu Gly Lys Ser Arg Thr Ser Pro  
 225 230 235

&lt;210&gt;1203

&lt;211&gt;110

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1203

Met Ala Ser Ser Ala Thr Pro Gly Phe Asp Gly Thr Ala Pro Ser Leu  
 1 5 10 15  
 Phe Pro Pro Ala Thr Arg Pro Arg Tyr Asn Phe Lys Leu Ala Leu Phe  
 20 25 30  
 Val Thr Ile Ala Ile Ala Leu Val Trp Ile Ala Leu Ile Ala Thr Thr  
 35 40 45  
 Ile Ala Ile Gly Leu Cys Ile His Pro Leu Cys Ser Phe Ile Phe Leu  
 50 55 60  
 Thr Ala Ile Pro Leu Tyr Phe Ile Ser Arg Tyr Ile Cys Ser His Tyr  
 65 70 75 80  
 Ala Arg Asn Val Tyr Ile Ala Leu Asp Val Val Pro Asp His Ser Lys  
 85 90 95  
 Leu Gln Asp Met Arg Ser His Ser Pro Ile Phe Ser Asp Arg  
 100 105 110

&lt;210&gt;1204

&lt;211&gt;196

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1204

Met Leu Ile Leu Gly Leu Leu Thr Pro Thr Phe Gly Ser Leu Lys Thr  
 1 5 10 15  
 Phe Pro Ser His Ser Ala Gly Lys Gln Thr His Ser Met Ile Gly Trp  
 20 25 30  
 Val Pro Gln His Phe Ser Tyr Asp Pro Cys Phe Pro Ile Ser Val Lys  
 35 40 45  
 Asp Val Val Leu Ser Gly Arg Leu Ser Gln Leu Ser Trp His Xaa Lys  
 50 55 60  
 Tyr Lys Xaa Lys Asp Phe Glu Ala Val Asp His Ala Leu Asp Asn Val  
 65 70 75 80  
 Gly Leu Ser Asp His His His His Cys Phe Ala His Leu Ser Gly Gly  
 85 90 95



Gln Ile Gln Arg Val Leu Leu Ala Arg Ala Leu Ala Ser Tyr Pro Glu  
 100 105 110  
 Ile Leu Ile Leu Asp Glu Pro Thr Thr Asn Ile Asp Pro Asp Asn Gln  
 115 120 125  
 Gln Arg Ile Leu Ser Ile Leu Lys Lys Leu Asn Arg Thr Cys Thr Ile  
 130 135 140  
 Leu Met Val Thr His Asp Leu His His Thr Thr Asn Tyr Phe Asn Lys  
 145 150 155 160  
 Val Phe Tyr Met Asn Lys Thr Leu Thr Ser Leu Ala Asp Thr Ser Thr  
 165 170 175  
 Leu Thr Asp Gln Phe Cys Cys His Pro Tyr Lys Asn Gln Glu Phe Ser  
 180 185 190  
 Cys Ser Pro His  
 195

&lt;210&gt;1205

&lt;211&gt;92

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1205

Met Leu Ser Ser Leu Ile Arg Asp Ser Phe Pro Leu Leu Ile Leu Leu  
 1 5 10 15  
 Pro Thr Phe Leu Ala Ala Leu Gly Ala Ser Val Ala Gly Gly Val Met  
 20 25 30  
 Gly Thr Tyr Ile Val Val Lys Arg Ile Val Ser Ile Ser Gly Ser Ile  
 35 40 45  
 Ser His Ala Ile Leu Gly Gly Ile Gly Leu Thr Leu Trp Ile Gln Tyr  
 50 55 60  
 Lys Leu His Leu Ser Phe Phe Pro Met Tyr Gly Ala Ile Val Gly Ala  
 65 70 75 80  
 Ile Phe Leu Ala Leu Cys Ile Gly Lys Arg Ser Thr  
 85 90

&lt;210&gt;1206

&lt;211&gt;188

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1206

Leu His Arg Gln Lys Ile His Leu Lys Tyr Gln Glu Arg Glu Asp Ser  
 1 5 10 15  
 Leu Ile Ala Met Ile Trp Ser Val Gly Met Ala Ile Gly Ile Ile Phe  
 20 25 30  
 Ile Ser Arg Leu Pro Thr Phe Asn Gly Glu Leu Ile Asn Phe Leu Phe  
 35 40 45  
 Gly Asn Ile Leu Trp Val Thr Pro Ser Asp Leu Tyr Ser Leu Xaa Ile  
 50 55 60  
 Phe Asp Leu Leu Val Leu Gly Ile Val Val Leu Cys His Thr Arg Phe  
 65 70 75 80  
 Leu Ala Leu Cys Phe Asp Glu Arg Tyr Thr Ala Leu Asn His Cys Ser  
 85 90 95  
 Val Gln Leu Trp Tyr Phe Leu Leu Leu Val Leu Thr Ala Ile Thr Ile  
 100 105 110  
 Val Met Leu Ile Tyr Val Met Gly Thr Ile Leu Met Leu Ser Met Leu  
 115 120 125  
 Val Leu Pro Val Ala Ile Ala Cys Arg Phe Ser Tyr Lys Met Thr Arg  
 130 135 140  
 Ile Met Phe Ile Ser Val Leu Leu Asn Ile Leu Cys Ser Phe Ser Gly  
 145 150 155 160  
 Ile Cys Ile Ala Tyr Cys Leu Asp Phe Pro Val Gly Pro Thr Ile Ser  
 165 170 175  
 Leu Leu Met Gly Leu Xaa Tyr Thr Ala Ser Leu Val  
 180 185

&lt;210&gt;1207

&lt;211&gt;112

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1207

Val Phe Ser Tyr Leu Leu Leu Cys Ile Ile Leu Val Tyr Val Arg Phe  
 1 5 10 15  
 Met Tyr Glu Gly Lys Ser Arg Met Ala Ser Pro Thr Pro Gly Gln Leu  
 20 25 30  
 His Leu Gln Gln Lys Val Glu Ser Lys Ala Tyr Asp Tyr Ser Arg Ser  
 35 40 45  
 Leu Ala Met Ile Ala Thr Ala Leu Leu Phe Phe Ile Val Ala Leu Ile  
 50 55 60  
 Leu Ser Gly Leu Ser Leu Leu Pro Gln Val Phe Leu Pro Phe Ser Gly  
 65 70 75 80  
 Ala Tyr Phe Ile Ile Gly Ser Phe Leu Ala Phe Ile Ala Leu Gly Ile  
 85 90 95  
 Leu Leu Ile Asn Cys Val Cys Asp Leu Lys Gln Tyr Leu Thr Ser Ser  
 100 105 110

&lt;210&gt;1208

&lt;211&gt;320

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1208

Val Leu Ile Ser Ile Ser Leu Ala Thr Leu Pro Ile Leu Ala Phe Ser  
 1 5 10 15  
 Trp Ala Ser Phe Ile Glu Pro Asn Trp Leu Arg Thr Thr Ala Ile Pro  
 20 25 30  
 Trp Arg Leu Pro Lys Lys His Ala His Leu His Gly Leu Arg Ile Ala  
 35 40 45  
 Gln Ile Ser Asp Leu His Phe His Lys Arg Val Pro Glu Lys Phe Leu  
 50 55 60  
 Asn Lys Val Ser Lys Ser Ile Lys Asn Phe Ser Pro Asp Leu Ile Val  
 65 70 75 80  
 Phe Cys Gly Asp Leu Leu Cys Arg Ala Arg Leu Glu Asp Lys Glu Arg  
 85 90 95  
 Leu Glu Thr Phe Leu Asn Thr Leu Glu Ala Pro Leu Gly Val Phe Ala  
 100 105 110  
 Ile Leu Gly Asn His Asp Tyr Ser Ser Tyr Ile Ser Arg Asn Thr Lys  
 115 120 125  
 Gly Glu Ile Thr Cys Ile Pro Glu Glu Lys Ser Arg Pro Ile Gln Arg  
 130 135 140  
 Ala Ile Ile Ala Val Met Gln Gly Leu Phe Ser Ser Pro Ser Tyr Arg  
 145 150 155 160  
 Tyr Asp Pro Asn Leu Thr Pro Gln Glu Pro His Pro Asp Leu Leu Lys  
 165 170 175  
 Leu Leu Lys Asn Thr Pro Leu Thr Leu Leu His Asn Thr Thr His Val  
 180 185 190  
 Ile Pro Asn Thr Leu Asn Ile Val Gly Leu Gly Asp Leu Phe Ala Arg  
 195 200 205  
 Gln Phe His Pro Glu Gln Ala Phe Lys Asn Tyr Asp Pro Ser Leu Pro  
 210 215 220  
 Gly Leu Leu Leu Ser His Asn Pro Asp Gly Ile Thr Arg Leu Gln Gln  
 225 230 235 240  
 Tyr Pro Gly Asp Phe Val Leu Ser Gly His Ser His Gly Pro Gln Val  
 245 250 255  
 Thr Leu Ser Trp Pro Lys Phe Ala Arg Lys Phe Phe Glu Arg Leu Ser  
 260 265 270  
 Gly Leu Glu Asn Pro Tyr Leu Ala Arg Gly Tyr Phe Val Thr Lys Glu  
 275 280 285  
 Gly Lys Gln Leu Tyr Val Asn Arg Gly Leu Gly Gly Leu Lys Arg Ile  
 290 295 300  
 Arg Phe Cys Ser Pro Pro Glu Ile Cys Tyr Ile Thr Cys Ser Tyr Asp  
 305 310 315 320

&lt;210&gt;1209

&lt;211&gt;185

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1209

Met Thr Ala Thr Met Ser Leu Leu Asn Leu Pro Ser Ser Gln Asp Ser  
 1 5 10 15  
 Ala Ser Glu Asp Ser Thr Ser Gln Ser Gln Ile Phe Asp Pro Ile Arg  
 20 25 30  
 Asn Arg Glu Leu Val Ser Thr Pro Glu Glu Lys Val Arg Gln Arg Leu  
 35 40 45  
 Leu Ser Phe Leu Met His Lys Leu Asn Tyr Pro Lys Lys Leu Ile Ile  
 50 55 60  
 Ile Glu Lys Glu Leu Lys Thr Leu Phe Pro Leu Leu Met Arg Lys Gly  
 65 70 75 80  
 Thr Leu Ile Pro Lys Arg Arg Pro Asp Ile Leu Ile Ile Thr Pro Pro  
 85 90 95  
 Thr Tyr Thr Asp Ala Gln Gly Asn Thr His Asn Leu Gly Asp Pro Lys  
 100 105 110  
 Pro Leu Leu Leu Ile Glu Cys Lys Ala Leu Ala Val Asn Gln Asn Ala  
 115 120 125  
 Leu Lys Gln Leu Leu Ser Tyr Asn Tyr Ser Ile Gly Ala Thr Cys Ile  
 130 135 140  
 Ala Met Ala Gly Lys His Ser Gln Val Ser Ala Leu Phe Asn Pro Lys  
 145 150 155 160  
 Thr Gln Thr Leu Asp Phe Tyr Pro Gly Leu Pro Glu Tyr Ser Gln Leu  
 165 170 175  
 Leu Asn Tyr Phe Ile Ser Leu Asn Leu  
 180 185

&lt;310&gt;1210

&lt;211&gt;173

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1210

Met Ala Asp Asp Thr Leu Ile Pro Lys Leu Met Lys Asn Ser Leu Ser  
 1 5 10 15  
 Gln Ala Cys Ser Glu Gly Leu Leu Ile Ala Lys Tyr Pro Pro Leu Gln  
 20 25 30  
 Val Ile Val His Phe Asp Asn Asn Leu Val Val Lys Thr His Leu Ser  
 35 40 45  
 Val Ala Pro Val Phe Ser Cys Leu Phe Leu Gly Pro Ala Ala His Lys  
 50 55 60  
 Ala Met Gln Glu Ile Val Leu Trp Cys Ser Arg Tyr Ala Asn Lys Glu  
 65 70 75 80  
 His Pro Pro Phe Ser Ser His Phe Ala Lys Asp Leu Ile Pro Ser Gln  
 85 90 95  
 Tyr Leu Glu Ile Leu Asn Cys Val Ala Glu Ile Pro Phe Gly Glu Gln  
 100 105 110  
 Gln Thr Tyr Ala Glu Ile Ala Lys Lys Thr Asp Thr His Pro Arg Thr  
 115 120 125  
 Val Gly Ala Ala Cys Lys Gln Asn Pro Phe Leu Leu Phe Phe Pro Cys  
 130 135 140  
 His Arg Val Val Gly Ser His Gly Glu Arg Asn Tyr Val Leu Gly Pro  
 145 150 155 160  
 Val Ile His Glu Ile Leu Leu Lys Phe Glu Asn Ser Tyr  
 165 170

&lt;310&gt;1211

&lt;211&gt;137

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1211

Met Ile Glu Asn Asp Phe Pro Glu Ala Ser Asn Phe Glu Ser Ser His  
 1 5 10 15  
 Phe Tyr Arg Asp Lys Val Gly Val Ile Ile Leu Cys Gly Gly Glu Gly  
 20 25 30  
 Lys Arg Leu Ser Pro Leu Thr Asn Cys Arg Cys Lys Pro Thr Val Ser  
 35 40 45  
 Phe Gly Gly Arg Tyr Lys Leu Ile Asp Ile Pro Ile Ser His Ala Ile

50 55 60  
 Ser Als Gly Phe Ser Lys Ile Phe Val Ile Gly Gln Tyr Leu Thr Tyr  
 65 70 75 80  
 Thr Leu Gln Gln His Leu Phe Lys Thr Tyr Phe Tyr His Gly Val Leu  
 85 90 95  
 Gln Asp Gln Ile His Leu Leu Ala Pro Glu Ala Arg Gln Gly Asp Gln  
 100 105 110  
 Ile Trp Tyr Gln Gly Thr Gln Met Gln Phe Glu Lys Thr Tyr Phe Ile  
 115 120 125  
 Ser Lys Ile Gln Lys Ser Asn Thr Phe  
 130 135

&lt;210&gt;1212

&lt;211&gt;94

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1212

Met Leu Ile Arg Leu Phe Leu Gly Ile Ser Leu Pro Lys Gly Phe Pro  
 1 5 10 15  
 Leu Tyr Leu Glu Pro Pro Leu Val Leu Ala Thr Phe Gln Gly Thr Gln  
 20 25 30  
 Phe Val Gly Thr Tyr Ser Glu Ala Thr Asn Pro Leu Tyr Ile Asp Asn  
 35 40 45  
 Leu Asn Leu Asn Tyr His Tyr Thr Gln Glu Leu Leu Tyr Lys Ala Val  
 50 55 60  
 Pro Cys Asn Tyr Lys Ser Ile Tyr Arg Glu Ile Pro Leu Ile Ile Phe  
 65 70 75 80  
 Pro Glu Val Leu Ile Gly Ser Thr Pro Thr Gln Ser Thr Glu  
 85 90

&lt;210&gt;1213

&lt;211&gt;168

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1213

Met Arg Gln Phe Cys Asn Leu Leu Ser Leu Ser Arg Leu Trp Leu Ala  
 1 5 10 15  
 Leu Tyr Phe Cys Gln Glu Lys Leu His Ile Arg Leu Leu Ala Ile Val  
 20 25 30  
 Gly Ala Met Leu Ser Asp Val Leu Asp Gly Tyr Leu Ala Arg Arg Tyr  
 35 40 45  
 Lys Ala Thr Ser Arg Leu Gly Ser Ile Leu Asp Pro Ile Thr Asp Lys  
 50 55 60  
 Val Phe Val Phe Val Cys Ile Thr Val Leu Tyr Met Glu Gly Ser Leu  
 65 70 75 80  
 Ser Ile Ala His Leu Phe Phe Ile Cys Ala Arg Asp Leu Phe Leu Asn  
 85 90 95  
 Thr Phe Val Phe Tyr Leu Ser Leu Val Lys Gly Trp Lys Gly Tyr Asp  
 100 105 110  
 Tyr Gly Ser Leu Phe Trp Gly Lys Ile Phe Thr Val Val Gln Phe Ile  
 115 120 125  
 Ile Leu Leu Gly Val Thr Ala Gly Gly Glu Ile Pro Trp Thr Gly Leu  
 130 135 140  
 Val Pro Leu Val Ala Leu Gly Phe Leu Tyr Phe Leu Glu Arg Ile Met  
 145 150 155 160  
 Asp Tyr Lys Lys Gln Phe Leu Arg  
 165

&lt;210&gt;1214

&lt;211&gt;88

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1214

Met Ser Arg Ser Leu Arg Lys Gly Pro Phe Val Asp His His Leu Leu  
 1 5 10 15  
 Lys Lys Val Arg Ala Met Asn Ile Glu Glu Lys Lys Thr Pro Ile Lys  
 20 25 30

Thr Trp Ser Arg Arg Ser Met Ile Thr Pro Glu Met Ile Gly His Thr  
 35 40 45  
 Phe Glu Val His Asn Gly Lys Lys Phe Leu Thr Val Phe Val Ser Glu  
 50 55 60  
 Thr Met Val Gly His Lys Leu Gly Glu Phe Ser Pro Thr Arg Ile Phe  
 65 70 75 80  
 Lys Ser His Pro Val Lys Lys Gly  
 85

&lt;210&gt;1215

&lt;211&gt;252

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1215

Met Leu Ile Val Leu Ala Phe Arg Gln Val Phe Phe Ser His Ser Arg  
 1 5 10 15  
 Ser Gln Leu Asp Arg Leu Lys Asn Tyr Leu Arg Leu Leu Lys Gln Asn  
 20 25 30  
 Phe Ala Ile Thr Leu Pro Lys Glu Arg Thr Ser Lys Gly His Ser Leu  
 35 40 45  
 Met Leu Thr Phe Asp Phe Ala Ser Phe Asp Phe Tyr Thr Asn Ile Phe  
 50 55 60  
 Pro Phe Leu Glu Glu Gln Lys Ile Pro Ala Val Val Gly Val Ala Ser  
 65 70 75 80  
 Arg Tyr Ile Pro Ser Asn Ala Ala Gln Asp Leu His Pro Ser His Arg  
 85 90 95  
 Leu Lys Pro Ser Glu Thr Leu Ala Phe Gln Asp Glu Ile Phe Ser Asn  
 100 105 110  
 Tyr Met Pro Phe Cys Cys Gln Asn Glu Leu Ile Glu Met Ala Lys Ser  
 115 120 125  
 Pro Tyr Ile Gln Leu Ala Ser Ser Gly Phe Ala Ile Arg Asn Leu Met  
 130 135 140  
 Asn Asn Pro Pro Tyr Leu Thr Thr Glu Ile Leu Leu Ser Arg His His  
 145 150 155 160  
 Ile Glu Thr Ile Thr Gly Ala Lys Pro Leu Ala Phe Leu Phe Pro Phe  
 165 170 175  
 Gly Lys Ser Asp Pro Thr Ser Arg Lys Leu Ala Ala Asp His Tyr Pro  
 180 185 190  
 Tyr Ser Phe Leu Leu Gly Asn Thr Ile Asn Arg Lys Leu Lys Thr His  
 195 200 205  
 Asn Ile Tyr Arg Leu Asp Ile Lys Pro Met Gln Tyr Val Cys Pro Ser  
 210 215 220  
 Leu Phe Gln Ser Ser Arg Tyr Leu Lys Asn Trp Ile Lys Glu Lys Ser  
 225 230 235 240  
 Lys Gln Leu Tyr Leu Lys Lys Gln Leu Pro Lys Arg  
 245 250

&lt;210&gt;1216

&lt;211&gt;149

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1216

Met Ala Asp Leu Glu Val Phe Gln Ala Asp Phe Ala Leu Leu Phe Glu  
 1 5 10 15  
 Ala Gly Leu Leu Ala Ile Lys Gln Gly Asp Glu Asp Ser Ala Arg Lys  
 20 25 30  
 Leu Phe Gln Ser Leu His Ile Leu Asn Pro Asn His Tyr Gly His Asp  
 35 40 45  
 Leu Gly Leu Ala Leu Ile Ser Leu His Lys Met Asp Leu Phe Asp Ala  
 50 55 60  
 Glu Glu Arg Leu Ser Ala Leu Ile Lys Gly Asn Glu Asp Asn Trp Ser  
 65 70 75 80  
 Ile Lys Ala Phe Leu Ser Leu Thr His Met Leu Ile Val Leu His Gln  
 85 90 95  
 Gly Ser Ser Phe Glu Val Arg Arg Glu Ser Leu Glu Ser Cys Leu Lys  
 100 105 110

Phe Ala Asp Gln Val Ile Ala Asn Cys Lys Ile Glu Ser Thr Arg Ala  
 115 120 125  
 Leu Ala Gln Ser Val Leu Asp Trp His Asp Thr Leu Val Ala Lys Ser  
 130 135 140  
 Ala Gly Pro Leu Gly  
 145

&lt;210&gt;1217

&lt;211&gt;75

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1217

Met Phe Phe Ala Pro Leu Leu Tyr Glu Ser Leu Arg Arg Gly Leu Met  
 1 5 10 15  
 His Pro Thr Ser His Met Gln Gln Gln Leu Ala Arg Leu Glu Phe Ile  
 20 25 30  
 Asn Asp Gln Leu Thr Thr Glu Leu Glu His Val Asn Glu Leu Leu Cys  
 35 40 45  
 Ser Leu Gly Phe Pro Glu Gly Leu Thr Thr Ile Lys Ala Ile Ala Glu  
 50 55 60  
 Glu Val Leu Ser Asp Asp Glu Pro Leu Leu Asp  
 65 70 75

&lt;210&gt;1218

&lt;211&gt;467

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1218

Leu Pro Ser Asn Arg Lys Asn Ala Lys Arg Asn Leu Tyr Lys Leu Ser  
 1 5 10 15  
 Phe Ile Ile Val Arg Lys Cys Val Val Thr Ser Ala Leu Asn Asp Phe  
 20 25 30  
 Phe Leu Thr Glu Thr Val Met Asn Ala Thr Lys His Cys Arg Ala Ser  
 35 40 45  
 Phe Ser Asn Ser Pro Arg His Leu Leu Ala Gln Leu Ala Glu Asp Ile  
 50 55 60  
 Thr Ser Thr His Gln Lys Pro Phe Thr Lys Arg Trp Ile Leu Val Ala  
 65 70 75 80  
 Asn Ala Thr Thr Gly His Trp Ile Lys Asn Gln Leu Val His Val Leu  
 85 90 95  
 Ser Asp His Ile Phe Met Gly Ser Thr Ile Phe Thr Ala Ser Asp Ser  
 100 105 110  
 Ile Val Lys His Leu Phe Leu Gly Ser Gly Cys Ser Gln Pro Asn Ile  
 115 120 125  
 Pro Asp Tyr Leu Thr Leu Pro Leu Leu Ile Asn Asn Ile Leu Glu Glu  
 130 135 140  
 Ile Ser Lys Ala Ser Lys Phe Glu Asn Gly Arg Glu Phe Leu Ser Pro  
 145 150 155 160  
 Pro Thr Tyr Gly Thr Thr Lys Lys Leu Ala Ala Ala Phe Lys Gln Phe  
 165 170 175  
 His Thr Phe Ser Gln Arg Pro Thr Lys Asn Ala Ser His Tyr Gln Glu  
 180 185 190  
 Leu Phe Gln Ile Leu Glu Ser His Phe Ser Ser Tyr Glu Glu Met Phe  
 195 200 205  
 Thr Thr Ile Leu Asn Asn Arg Thr Gln Glu Glu Asp Cys Ser Leu His  
 210 215 220  
 Ile Phe Gly Tyr Ala His Leu Pro Lys His Leu Ala Glu Phe Phe Ile  
 225 230 235 240  
 Asn Leu Ser Thr Tyr Phe Pro Val Tyr Phe Tyr Cys Phe Ser Pro Cys  
 245 250 255  
 Arg Glu Tyr Phe Gly Asp Leu Leu Ser Asp Arg Ala Ile Asp Phe Phe  
 260 265 270  
 Trp Asn Gln Leu Pro Asp Ser Pro Ile Lys Asn Ala Trp Glu His Tyr  
 275 280 285  
 Val Leu Ser Asp Arg Gln Ala Leu Leu Ala Asn Leu Ala His Lys Ser  
 290 295 300

Gln Ser Ser Gln Asn Phe Phe Leu Asp Arg Glu Ile Asp Gln Glu  
 305 310 315 320  
 Met Phe Leu Pro Ser Lys His Asp Ser Ser Leu Gly Val Ile Gln Asn  
 325 330 335  
 Ser Ile Leu Asp Leu Lys Pro Thr Ser Pro Cln Asp Phe Ser Gln Thr  
 340 345 350  
 Lys Gln Thr Ile Cys Ile Tyr Arg Ala Leu Asn Ile Pro Arg Glu Val  
 355 360 365  
 Gln Glu Val Phe Cys Lys Val Thr Glu Leu Leu His Arg Gly Val Ser  
 370 375 380  
 Pro Glu Glu Ile Phe Ile Leu Ser Ser His Ile Glu Ser Tyr Lys Val  
 385 390 395 400  
 His Leu Asn Ala Ile Phe Asn Pro His Val Pro Ile Tyr Phe Thr Asp  
 405 410 415  
 Glu Val Asp Pro Arg Ala Glu Asp Leu Arg Asn Lys Asn Pro Pro Thr  
 420 425 430  
 Phe Phe Tyr Phe Thr Asn Thr Arg Gly Phe Thr Leu His Ser Ser Thr  
 435 440 445  
 Pro Tyr Ala Pro Thr Thr Thr Thr Tyr Arg Ser Lys Gln Gly Ser  
 450 455 460  
 Leu Ser Asp  
 465

&lt;210&gt;1219

&lt;211&gt;81

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1219

Leu Glu Ala Pro Met Asn Glu Gly Ile His Ser Val Cys Phe Gln Lys  
 1 5 10 15  
 Thr Pro Arg Leu Thr Ala Lys Ser Val Val Ser Met Glu Met Leu Leu  
 20 25 30  
 Thr Thr Gln Gln Leu Pro Ser Ala Glu Gly Met Pro Ser Val Ala Asn  
 35 40 45  
 Leu Glu Ala Asp Phe Leu Arg Ala Glu Ala Leu Leu Ala Glu Met Arg  
 50 55 60  
 Glu Ile Arg Gly Cys Leu Glu Gln Ser Leu Arg Thr Leu Val Pro Ser  
 65 70 75 80  
 Glu

&lt;210&gt;1220

&lt;211&gt;95

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1220

Met Met Lys Tyr Leu Pro Tyr Ile Ala Ile Thr Ala Cys Ile His Gly  
 1 5 10 15  
 Gly Ile Leu Leu Leu Val Phe Ala Ser Pro Leu Pro Lys Lys Arg Leu  
 20 25 30  
 Gln Pro Lys Ala Phe Gln Glu Lys Leu Val Thr Ile Gln Pro Lys Pro  
 35 40 45  
 Pro Val Pro Thr Pro Ser Val Val Val Asp Pro Ala Lys Thr Ile Arg  
 50 55 60  
 Pro Ser Val Leu Arg Ser His Lys Asn Lys Leu Asn Ala Ala Leu Leu  
 65 70 75 80  
 Lys Arg Thr Ser Arg Arg Leu Tyr Lys Asn Pro Phe Gln Lys Leu  
 85 90 95

&lt;210&gt;1221

&lt;211&gt;96

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1221

Leu Asn Lys Phe Lys Thr Tyr Leu Gln Thr Ala Leu Ile Ala Pro Phe  
 1 5 10 15  
 Phe Ser Phe Pro Ala Leu Ser Gly Ser Phe Ser Ser Ile Gln Ala Glu

20 25 30  
 Glu Ile Xaa Gln Gln Val Asn His Pro Gly Ala Glu Leu Leu Ser Glu  
 35 40 45  
 Gly Ser Tyr Ile Pro Gly Leu Gln Thr Phe Arg Leu Gly Ile Lys Ile  
 50 55 60  
 Tyr Ser Phe Gln Arg Glu Pro Tyr Leu Leu Glu Glu Ser Arg Arg Asn  
 65 70 75 80  
 Trp Lys Ser Ser Gln Asn Phe Leu Ala Val Ala Glu Arg Phe Arg Gly  
 85 90 95

&lt;210&gt;1222

&lt;211&gt;76

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1222

Val Arg Ala Leu Phe Arg Ser Gly Tyr Lys Gly Arg Gln Gly Ile Tyr  
 1 5 10 15  
 Glu Phe Leu Arg Pro Asn Thr Leu Phe Arg Ser Glu Val Ala Ser Asn  
 20 25 30  
 Arg Pro Tyr His Ile Leu Arg Glu Thr Ala Glu Gln Asn Gly Phe Leu  
 35 40 45  
 Pro Ile Leu Glu His Gly Ile Ala Leu Ala Val Ser Gly Glu Thr Thr  
 50 55 60  
 Leu Ala Glu Val Leu Arg Val Thr Lys Arg Cys Asp  
 65 70 75

&lt;210&gt;1223

&lt;211&gt;185

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1223

Val Pro Thr Leu Ala Lys Ser Phe Tyr Ile Asn Ile Arg Asp Ser Arg  
 1 5 10 15  
 Phe Tyr Ser Trp Leu Cys Phe Ile Met Lys Glu Thr Tyr Tyr Arg Asp  
 20 25 30  
 Phe Leu His Glu Asn Tyr Leu Lys Asn Lys Lys Ser Met Phe Met Lys  
 35 40 45  
 Ile Tyr Lys Thr Ala Gly Glu Phe Phe Leu Ala Asn Ala Lys Trp Pro  
 50 55 60  
 Leu Val Pro Ala Gly Tyr Arg Arg Val Arg Gly Lys Asp Phe Val Leu  
 65 70 75 80  
 Ser Pro Leu Val Asp Leu Val Ile Leu Phe Pro Trp Val Thr Lys Asp  
 85 90 95  
 Ser Arg Tyr Ser Pro Cys Ser Met Thr Phe Thr Cys Ile Cys Arg Ser  
 100 105 110  
 Ile Val Glu Cys Ile Pro Val Val Ser Thr Leu Phe Gly Ile Gly Arg  
 115 120 125  
 Phe Cys Ala Val Trp Cys Val Glu Gly Phe Ser Gly Ser Thr Phe Asp  
 130 135 140  
 Lys Ile Tyr His Thr Ile Val Ala Val Leu Gly Ile Leu Gly Leu Gly  
 145 150 155 160  
 Ile Leu Thr Phe Ile Leu Arg Ile Ile Phe Ser Val Leu Met Leu Pro  
 165 170 175  
 Val Trp Phe Leu Phe Lys Cys Tyr Ser  
 180 185

&lt;210&gt;1224

&lt;211&gt;75

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1224

Met Trp Trp Asn Pro Ala Val Glu Asn Gln Ala Thr Asp Arg Val His  
 1 5 10 15  
 Arg Ile Gly Gln Ser Arg Ser Val Ser Ser Tyr Lys Leu Val Thr Leu  
 20 25 30  
 Asn Thr Ile Glu Glu Lys Ile Leu Thr Leu Gln Asn Arg Lys Xaa Ser  
 35 40 45



Leu Val Lys Lys Val Ile Asn Ser Asp Asp Glu Val Val Lys Leu  
 50 55 60  
 Thr Trp Glu Glu Val Leu Glu Leu Leu Gln Ile  
 65 70 75

&lt;210&gt;1225

&lt;211&gt;132

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1225

Met Arg Asp Arg Leu Gly Ser Leu Ser Leu Ile Leu Lys Val Lys Ile  
 1 5 10 15  
 His Lys Tyr Leu Asp Thr Leu His Asn Gln Lys Arg Leu Ala Leu Thr  
 20 25 30  
 Val Ser Arg Asn Ile Gln Ala Thr Asn Lys Arg Ile Ala Asp Leu His  
 35 40 45  
 Leu Glu Arg Tyr Glu His Phe Ile Ser Arg Asp Asn Ile Lys His Tyr  
 50 55 60  
 Asp Ile Leu Leu Glu Tyr Leu Lys Thr Leu Gln Ser Ser Leu Tyr Lys  
 65 70 75 80  
 Gln Gln Ser Glu Ser Leu Arg Phe Leu Glu Ile His His Gln Gln Leu  
 85 90 95  
 Gln Glu Leu Ile Asn Arg Arg Lys Ile Ile Glu Lys Ile Lys Asn Asn  
 100 105 110  
 Lys Tyr Ser Lys Asp Gln Glu Ile Oly Thr  
 115 120

&lt;210&gt;1226

&lt;211&gt;178

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1226

Val Thr Thr Pro Gln Ser Pro Gly Ser Leu Ser Gln Ser His Leu Pro  
 1 5 10 15  
 His Pro His Asp Pro Trp Asp Thr Glu Pro Thr Ser Leu Xaa Glu Xaa  
 20 25 30  
 Pro Asn Asp Lys Ala Ser Gln Glu Leu His Ser Leu Val His Leu Phe  
 35 40 45  
 Arg Lys Leu Ser Ile His Leu Leu Ser Glu Val Glu Lys Thr Val Gln  
 50 55 60  
 Gln Leu Lys Pro Asp Leu Leu Glu Leu Ala Leu Leu Ile Cys Glu Lys  
 65 70 75 80  
 Phe Leu Tyr Lys Lys Leu Glu Asn Pro Gln Glu Leu Ala Leu Leu Leu  
 85 90 95  
 Ser Thr Ala Leu Gln Arg His Thr Thr Leu Arg Ser Leu Thr Pro Ile  
 100 105 110  
 Lys Val Phe Leu His Pro Glu Asp Leu Lys Thr Leu Thr Asp Trp Ile  
 115 120 125  
 Ser Thr His Glu Leu Pro Met Ile Lys His Ala Glu Phe Phe Pro Asp  
 130 135 140  
 Thr Ser Cys Arg Arg Ser Gly Phe Lys Ile Glu Thr Pro Asn Gly Ile  
 145 150 155 160  
 Leu Arg Gln Glu Ile Ser Glu Glu Leu Asp His Leu Leu Ser Val Leu  
 165 170 175  
 Thr Ala

&lt;210&gt;1227

&lt;211&gt;161

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1227

Leu Leu Leu Arg Tyr His Ala Lys Ala Glu Lys Pro Thr Leu Gln Leu  
 1 5 10 15  
 Thr Leu Asn Glu Asn Tyr Ile Ala His Leu Thr Lys Glu Glu Ser Glu  
 20 25 30  
 Lys Ile Val Ala His Thr Lys His Tyr Leu Leu Ser Asn Xaa Asp Asp

35 40 45  
 Ser Tyr Asp Ile Val Ile Glu Thr Leu Pro Phe Ala Arg Leu Gln Asn  
 50 55 60  
 Lys Lys Ser Phe Ser Ala Lys Val Leu Ile Gly Ser Met Ile Leu Val  
 65 70 75 80  
 Ile Ser Leu Met Ile Val Ala Leu Ala Ser Phe Tyr Leu Ala Arg His  
 85 90 95  
 Ala Tyr Glu Arg Val Ser Pro Glu Pro Arg Lys Ile Lys Arg Gly Ile  
 100 105 110  
 Asn Ile Ser Lys Leu Leu Glu Ile Ile Gln Lys Glu Ser Pro Glu Lys  
 115 120 125  
 Ile Ala Leu Ile Leu Ser Tyr Leu Asp Pro Lys Lys Ala Glu Ala Leu  
 130 135 140  
 Leu Asn Arg Leu Pro Glu Asp Leu Lys His Gln Val Leu Lys Tyr Lys  
 145 150 155 160  
 Leu

&lt;210&gt;1228

&lt;211&gt;75

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1228

Val Phe Phe Gln Asn Leu Ala Lys Lys Leu Thr Ala Leu Gly Ile Ser  
 1 5 10 15  
 Pro Leu Gly Cys Leu Leu Ile Gly Gly Val Val Ser Cys Ala Ile Leu  
 20 25 30  
 Phe Gly Arg Ser Ser Asn Pro Ser Leu Ala Pro Thr Gln Val Lys Thr  
 35 40 45  
 Glu Lys Thr Ser Gly Asn Trp Leu Lys Leu Thr Gln Met Gly Asn Pro  
 50 55 60  
 Lys Leu Ile Glu Ser Leu Thr Lys Lys Asp Ser  
 65 70 75

&lt;210&gt;1229

&lt;211&gt;100

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1229

Met Gly Tyr Val Phe Tyr Val Ile Ala Gly Ser Ile Phe Leu Gly Ile  
 1 5 10 15  
 Ser Leu Gly Ala Tyr Cys Gln Leu Tyr Tyr Ser Val Lys Ser Val Leu  
 20 25 30  
 Phe Ser Trp Tyr Leu Leu Thr Val Tyr Ala Leu Glu Lys Arg His Ala  
 35 40 45  
 Leu Leu Ala Leu Ser Gln Leu Val Gly Glu Glu Asp Ala Gln Ser Gln  
 50 55 60  
 Lys Glu Ile Asp Phe Leu Ser Gln Cys Asp Lys Leu Ser Trp Arg Ala  
 65 70 75 80  
 Phe Leu Lys Asn Ser Tyr Glu Ile Ile Pro Thr Phe Gln Arg Asp Gly  
 85 90 95  
 Arg Pro Ser Phe  
 100

&lt;210&gt;1230

&lt;211&gt;103

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1230

Val Thr Ser Ser Leu Gly Val Arg Ser Ser Lys Ile Ala Thr Arg Ser  
 1 5 10 15  
 Ser Gln His Phe Lys Glu Met Glu Asp Leu Leu Ser Glu Arg Val Gln  
 20 25 30  
 Gly Phe Leu Glu Ser Ile Glu Thr Ile Ala Glu His Asp Arg Ala Ile  
 35 40 45  
 Leu Cys Ile Glu Asn Phe Trp Ala Ser Lys Asn Leu Phe Asp Phe Glu  
 50 55 60

Ile Ala Ala Tyr Glu Glu Ala Val Glu Lys Tyr Leu Lys Arg Gln  
 65 70 75 80  
 Arg Ala Pro Leu Arg Leu Ala Ser Lys Leu Phe Arg Phe Leu Asp Val  
 85 90 95  
 Pro Ser Ile Arg Phe Ser Ser  
 100

&lt;210&gt;1231

&lt;211&gt;94

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1231

Ser Ile Ala Thr Gly Glu Thr Met Leu Tyr Phe Ile Glu Gln Leu Asn  
 1 5 10 15  
 Lys Leu Ser Thr Ser Phe Cys Val Phe Pro Met Ile Leu Leu Leu Gly  
 20 25 30  
 Gly Phe Leu Thr Trp Lys Leu Arg Gly Leu Gln Phe His Gly Leu Lys  
 35 40 45  
 Leu Gly Phe Asn Leu Met Leu Gln Asn Lys Leu Asp Asp Ser Ser Ser  
 50 55 60  
 Lys Ala Asn Glu Val Ser Ser Tyr Glu Ala Val Ala Gly Ile Leu Ala  
 65 70 75 80  
 Gly Asn Phe Gly Thr Gly Asn Ile Ala Gly Met Leu Ser Pro  
 85 90

&lt;210&gt;1232

&lt;211&gt;240

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1232

Val Pro Asn Arg His Val Asp Met Asn Ser Trp Trp Arg Ser Ala Cys  
 1 5 10 15  
 Tyr Pro Arg Ser Thr Phe Tyr Pro Leu Ser Asp Gly Asp Ser Thr Phe  
 20 25 30  
 His Arg Arg Ile Thr Lys Pro Asp Phe Arg Leu Cys Ser Thr Cys Lys  
 35 40 45  
 Ser Cys Ser Gln Pro Ile Leu Tyr Leu Tyr Ala Leu Leu Val Ile Ala  
 50 55 60  
 Asn His Asp Glu Ile Ser Phe Gly Leu Leu Arg Tyr Phe Leu Gly Gly  
 65 70 75 80  
 Tyr Arg Pro Ser Lys Thr Ala Arg Leu Ala Met Ser Ile Leu Gln Ile  
 85 90 95  
 His Gly Val Met Leu Asp Ser Gln Leu Val Lys Thr Ser Ile Ser Thr  
 100 105 110  
 Met Thr Pro Thr Leu Leu Thr Lys Ser Val His Ser Leu Leu Ala Ile  
 115 120 125  
 Leu His Ile Thr Asn Gln Lys Ser Ile Pro Lys Tyr Ser Lys Gly Ser  
 130 135 140  
 Arg Gly Leu Phe Val Leu Leu Arg Val Asn Ser Ile Phe Thr Ala Thr  
 145 150 155 160  
 Thr Ile Ser Pro Ser Leu Ser Leu Arg Gln Cys Pro Asp Arg Tyr Thr  
 165 170 175  
 Ile Arg Ala Gly Arg Asn Leu Pro Asp Lys Glu Phe Arg Tyr Leu Ser  
 180 185 190  
 Thr Val Ile Val Thr Ala Ala Ile His Gln Gly Leu Gly Ser Met Leu  
 195 200 205  
 Ser Leu Arg Leu Thr Tyr Pro Phe Asn Leu Leu Ala Leu Gly Arg Arg  
 210 215 220  
 His Thr Ile Tyr Phe Pro Leu Glu Val Cys Ile Val Leu Cys Phe Cys  
 225 230 235 240

&lt;210&gt;1233

&lt;211&gt;133

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1233

Leu Asn Phe Val Ser Thr Leu Thr Gly Ser Asp Phe Tyr Ala Pro Val

1 5 10 15  
 Leu Glu Lys Leu Glu Glu Ala Phe Ala Asp Thr Thr Gly Gln Ala Ile  
 20 25 30  
 Leu Phe Ser Ser Ser Pro Asp Phe Ile Val His Pro Ile Ala Gln Gln  
 35 40 45  
 Leu Gly Ile Ser Ser Trp Tyr Ala Ser Cys Tyr Arg Asp Gln Ser Ala  
 50 55 60  
 Glu Gln Thr Ile Tyr Lys Lys Cys Leu Thr Gly Asp Lys Lys Ala Gln  
 65 70 75 80  
 Ile Leu Ser Tyr Ile Lys Lys Ile Asn Gln Ala Arg Ser His Thr Phe  
 85 90 95  
 Ser Asp His Ile Leu Asp Leu Pro Phe Leu Met Leu Gly Glu Glu Lys  
 100 105 110  
 Thr Val Val Arg Pro Gln Gly Arg Leu Lys Lys Met Ala Lys Lys Tyr  
 115 120 125  
 Tyr Trp Asn Ile Val  
 130

&lt;210&gt;1234

&lt;211&gt;118

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1234

Val Ile Leu Leu Gln Asn Ile Lys Arg Cys Ser Leu Lys Gln Leu Lys  
 1 5 10 15  
 Val Leu Ala Thr Leu Leu Leu Ser Leu Ser Leu Pro Thr Leu Glu Ala  
 20 25 30  
 Ala Glu Asn Arg Asp Ser Asp Ser Ile Val Trp His Leu Asp Tyr Gln  
 35 40 45  
 Glu Ala Leu Gln Lys Ser Lys Glu Ala Glu Leu Pro Leu Leu Val Ile  
 50 55 60  
 Phe Ser Gly Ser Asp Trp Asn Gly Pro Cys Met Lys Ile Arg Lys Glu  
 65 70 75 80  
 Val Leu Glu Ser Pro Glu Phe Ile Lys Arg Val Gln Gly Lys Phe Val  
 85 90 95  
 Cys Val Glu Val Glu Tyr Leu Lys His Arg Pro Gln Leu Lys Thr Phe  
 100 105 110  
 Val Ser Lys Ile Leu Leu  
 115

&lt;210&gt;1235

&lt;211&gt;87

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1235

Met Lys Ser Phe Lys Phe Leu Leu Pro Phe Leu Ser Val Ile Leu Cys  
 1 5 10 15  
 Cys Gly Asn Leu Leu Ser Ser Pro Arg Ser Arg Ala Ile Ser Val Thr  
 20 25 30  
 Glu Ser Ile Gly Met Ser Ala Val Lys Thr Leu Val Leu Ser Glu Lys  
 35 40 45  
 Ala His Glu Phe Leu Glu Gly Ile Gly Tyr Gly Val Gly Ala Ser Ser  
 50 55 60  
 Ile Leu Arg Asp Trp Gln Thr Gln Gln Trp Leu Glu Ile Glu Ser Leu  
 65 70 75 80  
 Leu Ala Gln Asn Glu Val Met  
 85

&lt;210&gt;1236

&lt;211&gt;141

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1236

Met Gln Tyr Phe Ser Pro Ala Lys Leu Asn Leu Phe Leu Lys Ile Trp  
 1 5 10 15  
 Gly Lys Arg Phe Asp Asn Phe His Glu Leu Thr Thr Leu Tyr Gln Ala  
 20 25 30

Ile Asp Phe Gly Asp Thr Leu Ser Leu Lys Asn Ser Met Lys Asp Ser  
 35 40 45  
 Leu Ser Ser Asn Val Asn Glu Leu Leu Ser Pro Ser Asn Leu Ile Trp  
 50 55 60  
 Lys Ser Leu Glu Ile Phe Arg Arg Glu Thr Gln Ile His Gln Pro Val  
 65 70 75 80  
 Ser Trp His Leu Asn Lys Ser Ile Pro Leu Gln Ser Gly Leu Gly Gly  
 85 90 95  
 Gly Ser Ser Asn Ala Ala Thr Ala Leu Tyr Ala Leu Asn Glu His Phe  
 100 105 110  
 Gln Thr His Ile Pro Ile Thr Thr Leu Gln Leu Trp Ala Arg Glu Ile  
 115 120 125  
 Gly Ser Asp Val Pro Phe Phe Phe Leu Gln Glu Gln His  
 130 135 140

&lt;210&gt;1237

&lt;211&gt;174

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1237

Leu Gly Ser Arg Asn Arg Lys Arg Cys Ser Phe Phe Phe Ser Ser Gly  
 1 5 10 15  
 Thr Ala Leu Gly Lys Gly Arg Gly Glu His Leu Phe Ser Ile Lys Lys  
 20 25 30  
 Leu Asn His Lys His Lys Tyr Val Leu Tyr Leu Asp His Gln Gly Ile  
 35 40 45  
 Pro Thr Glu Lys Ala Tyr Gln Ser Leu Leu Pro Gln Asp Tyr Ser Thr  
 50 55 60  
 Gly Asn His Asn Ala Cys Phe Tyr Gly Glu Asn Asp Leu Glu Lys Ser  
 65 70 75 80  
 Val Phe Arg Ile Arg Thr Asp Leu Lys Asn Lys Lys His Met Leu Glu  
 85 90 95  
 Arg Met Trp Ser Pro Phe Glu Ser His Val Leu Met Ser Gly Ser Gly  
 100 105 110  
 Ala Thr Leu Phe Val Cys Tyr Leu Glu Glu Leu Glu Gln Asp Ser Lys  
 115 120 125  
 Val Ser Ser Gln Ile His Ser Leu Ile Lys Gln Thr Gln Gly Ile Pro  
 130 135 140  
 Val Ser Arg Leu Tyr Arg Glu Pro His Trp Tyr Ser Leu Lys Gln Ser  
 145 150 155 160  
 Thr Tyr Lys Asn Ser Pro Leu Glu Cys Phe Gln Pro Gln Ile  
 165 170

&lt;210&gt;1238

&lt;211&gt;106

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1238

Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg Val Gln Gly  
 1 5 10 15  
 Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly Leu Ile Val  
 20 25 30  
 Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu Tyr Arg Ser  
 35 40 45  
 Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu Gly Val Ser  
 50 55 60  
 Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Val Gly Gln Val  
 65 70 75 80  
 Met Ala Tyr Ala Met Val Leu Ala Lys Gly Met Glu Ile Asp Cys Pro  
 85 90 95  
 Arg Asn Leu Ala Lys Ser Val Thr Val Glu  
 100 105

&lt;210&gt;1239

&lt;211&gt;217

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1239

```

Met Ser Asn Lys Val Leu Gly Gly Ser Leu Leu Ile Ala Gly Ser Ala
 1          5          10          15
Ile Gly Ala Gly Val Leu Ala Val Pro Val Leu Thr Ala Lys Gly Gly
          20          25          30
Phe Phe Pro Ala Thr Phe Leu Tyr Ile Val Ser Trp Leu Phe Ser Met
          35          40          45
Ala Ser Gly Leu Cys Leu Leu Glu Val Met Thr Trp Met Lys Glu Ser
          50          55          60
Lys Asn Pro Val Asn Met Leu Ser Met Ala Glu Ser Ile Leu Gly His
          65          70          75          80
Val Gly Lys Ile Ser Ile Cys Leu Val Tyr Leu Phe Leu Phe Tyr Ser
          85          90          95
Leu Leu Ile Ala Tyr Phe Cys Glu Gly Gly Asn Ile Leu Cys Arg Val
          100          105          110
Phe Asn Cys Gln Asn Leu Gly Ile Ser Trp Ile Xaa Xaa Leu Gly Pro
          115          120          125
Leu Gly Phe Ala Ile Leu Met Gly Pro Ile Ile Xaa Xaa Gly Thr Xaa
          130          135          140
Xaa Ile Asp Tyr Cys Xaa Xaa Phe Phe Xaa Xaa Gly Leu Xaa Val Xaa
          145          150          155          160
Phe Gly Ile Xaa Xaa Ala Leu Gly Phe Leu Lys Ile Gln Pro Ser Phe
          165          170          175
Met Val Arg Ser Ser Met Val Asn Tyr Asn Lys Arg Ile Ser Cys Val
          180          185          190
Phe Ser Leu Leu Phe Gly Phe Gln Ser Xaa Ile Pro Thr Leu Tyr Tyr
          195          200          205
Tyr Met Asp Lys Lys Ser Trp Arg Cys
          210          215

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&lt;210&gt;1240

&lt;211&gt;115

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1240

```

Leu Val Ser Ser Phe Val Gly Val Ala Leu Gly Val Met Asp Phe Leu
 1          5          10          15
Ala Asp Gly Leu Lys Trp Asn Lys Lys Ser His Pro Phe Ser Ile Phe
          20          25          30
Phe Leu Thr Phe Ile Ile Pro Leu Ala Trp Ala Val Cys Tyr Pro Glu
          35          40          45
Ile Val Leu Thr Cys Leu Lys Tyr Ala Gly Gly Phe Gly Ala Ala Val
          50          55          60
Ile Ile Gly Val Phe Pro Thr Leu Ile Val Trp Lys Gly Arg Tyr Gly
          65          70          75          80
Lys Gln His His Arg Glu Lys Gln Leu Val Pro Gly Gly Lys Phe Ala
          85          90          95
Leu Phe Leu Met Phe Leu Leu Ile Val Ile Asn Val Val Ser Ile Tyr
          100          105          110
His Glu Leu
          115

```

&lt;210&gt;1241

&lt;211&gt;105

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1241

```

Leu Phe Pro Leu Val Leu Leu Ala Trp Val Ile Arg Tyr Gln Leu His
 1          5          10          15
Ala Asn Phe His Cys Ser Val Val Pro Phe Pro Gly Phe Ser Val Asn
          20          25          30
Gln Ala Tyr Lys Cys Ser Glu Ala Lys Ile Glu Glu Met Leu Asp Leu
          35          40          45
Leu Asp Leu Glu Thr Leu Glu Trp Ser Ser Arg Cys Leu Arg Gln Asp
          50          55          60
Met Thr Phe Ala Asn Arg Leu Glu Glu Glu Leu Ile Gln Glu Leu Arg

```

65 70 75 80  
 Val Ser Glu Thr Glu Glu Leu Ile Ser Leu Gly Gly Lys Arg Asn Leu  
 85 90 95  
 Val Arg Leu Leu Leu Thr His Ser Phe  
 100 105

&lt;210&gt;1242

&lt;211&gt;158

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1242

Met Arg Val Ile Phe Pro Asp Lys His Asn Asn Phe Pro Asn Leu Ser  
 1 5 10 15  
 Lys Leu Leu Lys Lys Leu Pro Ser Val Ile Leu Val Thr Ser Cys Ile  
 20 25 30  
 Ala Pro Phe Phe Ser Tyr Ile Ile Asn Lys Phe Phe Gly Ile Pro Gly  
 35 40 45  
 Leu Leu Glu Ile Leu Ala Leu Ser Val Lys Gly Ile Gln Lys His His  
 50 55 60  
 Phe Trp Gln Phe Leu Thr Tyr Pro Leu Ile Thr Ala Asp Ser Leu Ser  
 65 70 75 80  
 Leu Asn Lys Asp Gln Ser Phe Glu Ile Thr Gln Arg Leu Leu Leu Arg  
 85 90 95  
 Asn Val Leu Asp Phe Phe Leu Phe Tyr Lys Ala Ile Gln His Leu Ile  
 100 105 110  
 Arg Lys Leu Gly Ala Phe Ser Val Leu Val Val Ile Ser Gly Gln Ala  
 115 120 125  
 Leu Ile Ile Gly Ala Val Leu Trp Gly Phe Met Ala Leu Ile Thr Ala  
 130 135 140  
 Pro Asn Leu Ser Ser Val Arg Lys Val Leu Ser Val Val Phe  
 145 150 155

&lt;210&gt;1243

&lt;211&gt;135

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1243

Met Arg Leu Lys Asn Tyr Pro Met Ile Gln Phe Ser Phe Phe Leu Pro  
 1 5 10 15  
 Gln Thr Cys Ile Leu Leu Leu Ala Ser Asp Ser Leu Thr Asn Ile Leu  
 20 25 30  
 Ala Leu His His Leu Leu Ala Asn Tyr Ser Val Lys Gln Arg Met Leu  
 35 40 45  
 Val Leu Leu Arg Glu Ser Phe Phe Ala Phe Ile Ala Met Phe Ala Leu  
 50 55 60  
 Tyr Gly Leu Ala Leu Gly Gly Leu Lys Val Leu Asn Thr Pro Val Cys  
 65 70 75 80  
 Ala Ile Glu Val Val Gly Gly Ile Ala Val Thr Leu Ala Gly Val Arg  
 85 90 95  
 Ala Val Leu Arg Leu Gly Lys Glu Glu Ser Trp Ile Pro Tyr Lys Phe  
 100 105 110  
 Asn Met Ser Pro Ser Tyr Ser Pro Cys Ile Ser Pro Ile Ala Leu Pro  
 115 120 125  
 Leu Met Phe Gly Pro Ser Gly  
 130 135

&lt;210&gt;1244

&lt;211&gt;160

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1244

Met Lys Lys Lys Phe Ile Phe Tyr Phe Val Ile Val Phe Ser Leu Leu  
 1 5 10 15  
 Phe Leu Trp Glu Met Thr Ser Arg His Arg Pro Thr Phe Ser Phe Phe  
 20 25 30  
 Cys Pro Pro Pro Ser Ser Ile Ala Ser Ser Thr Leu Gln Ser Leu Pro  
 35 40 45

Leu Leu Leu Thr Ser Ala Trp His Thr Leu Lys Ala Ile Leu Gly Gly  
 50 55 60  
 Phe Phe Leu Ala Ile Thr Leu Ser Ile Val Leu Ala Thr Ile Met Leu  
 65 70 75 80  
 Ser Tyr Lys Ser Ala Lys Asp Leu Leu Gln Pro Leu Phe Ile Leu Leu  
 85 90 95  
 Gln Cys Thr Pro Met Phe Ala Leu Ala Pro Leu Ile Val Leu Trp Phe  
 100 105 110  
 Gly Trp Gly Ile Gly Ala Val Ile Val Pro Thr Ala Leu Thr Ile Phe  
 115 120 125  
 Phe Pro Leu Thr Leu Thr Ile Tyr Gln Gly Ile Leu Ser Thr Pro Glu  
 130 135 140  
 Glu Leu Ile Glu Gln Phe Val Leu Cys Gly Val Gln Asn Ser Asn Ser  
 145 150 155 160

&lt;210&gt;1245

&lt;211&gt;227

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1245

Met Leu Trp Gly Val Ser Met Arg Gln Ser Phe Asp Glu Leu Ser Gln  
 1 5 10 15  
 Asn Ala Phe Lys Asn Ile Phe Asn Lys Gln Arg Phe Cys Phe Ile Phe  
 20 25 30  
 Cys Ser Leu Cys Cys Phe Gly Phe Val Phe Ala Leu Phe Leu Lys Leu  
 35 40 45  
 Cys Ser Arg Leu Ala Pro Glu Ile Ser Leu Ser Thr Leu Gly Leu Gly  
 50 55 60  
 Ala Phe Phe Cys Ala Phe Ser Val Ile Cys Ala Ser Ala Ile Ile Val  
 65 70 75 80  
 Gln Phe Leu Leu His Lys Gln Ser Gln Gly Glu Thr Ser Lys Leu Cys  
 85 90 95  
 Cys Ala Ile Lys Asn Thr Trp Ser Ser Leu Trp Leu Ser Leu Leu Val  
 100 105 110  
 Ser Met Pro Phe Phe Ile Ala Met Val Ala Val Val Thr Val Ala Met  
 115 120 125  
 Leu Ser Ser Phe Leu Gly Ser Leu Pro Trp Val Gly Lys Leu Phe His  
 130 135 140  
 Thr Val Leu Ile Phe Ile Pro Tyr Leu Ser Ala Thr Ala Leu Ile Leu  
 145 150 155 160  
 Leu Phe Leu Gly Ser Phe Ser Cys Leu Phe Phe Cys Ile Pro Val Leu  
 165 170 175  
 His Asn Gln Glu Ser Ile Asp Tyr Arg Lys Leu Pro Arg Val Phe Ser  
 180 185 190  
 Trp Glu Tyr Pro Ser Ala Val Tyr Arg Gly Gly Asp Cys Phe Gly Ser  
 195 200 205  
 Xaa Ser Pro Met Gln Leu Val Ser Phe Arg Phe Phe Leu Phe Asp Asp  
 210 215 220  
 Thr Ser Cys  
 225

&lt;210&gt;1246

&lt;211&gt;78

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1246

Val Val Ile Ala Leu Val Pro Leu Ala Leu Cys Ser Trp Leu Ala Leu  
 1 5 10 15  
 Asp Ser Phe Tyr Leu Met Thr His Leu Val Glu Ile Ala Asp Ile His  
 20 25 30  
 Thr Trp Ser Phe Leu Ala Gln Met Phe Val Leu Ile Val Pro Ile Ala  
 35 40 45  
 Leu Ile Leu Thr Pro Ala Val Ser Phe Phe Phe Asn Phe Ser Phe Ser  
 50 55 60  
 Phe Tyr Leu Ala Lys Gln Glu Glu Glu Lys Ala Leu Val Lys  
 65 70 75



&lt;210&gt;1247

&lt;211&gt;94

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1247

```

Leu Arg Ala Phe Phe Pro Val Lys Ala Trp Arg Ser Pro Glu Asp Ile
 1              5              10              15
Pro Glu Ala Pro Ser Pro Lys Gly Ile Gly Ser Lys Arg Ser Ile Val
              20              25              30
Ala Val Pro Trp Glu Trp Arg Ser Arg Cys Gln Val Thr Glu Ser Pro
              35              40              45
Ala Tyr Pro Ala Pro Lys Thr Ala Ile Arg Ile Lys Cys Thr Leu Asn
              50              55              60
Gln Val Ser Leu His Arg Pro Cys Leu Glu Asn Lys Arg Ile Arg Asp
              65              70              75              80
Lys Arg Thr Gly Gly Asn Leu Ser Asp Trp Glu Ile Lys Met
              85              90

```

&lt;210&gt;1248

&lt;211&gt;86

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1248

```

Met Arg Ile Ala Val Leu Gly Ala Gly Tyr Ala Gly Leu Ser Val Thr
 1              5              10              15
Trp His Leu Leu Leu His Ser Gln Gly Thr Ala Thr Ile Asp Leu Phe
              20              25              30
Asp Pro Ile Pro Leu Gly Glu Gly Ala Ser Gly Met Ser Ser Gly Leu
              35              40              45
Leu His Ala Phe Thr Gly Lys Lys Ala Leu Lys Pro Pro Leu Val Gly
              50              55              60
Ser Arg Asn Gln Cys Tyr Thr Arg Val Asn His Xaa Ala Leu Val Lys
              65              70              75              80
Pro Ser Thr Tyr Leu Leu
              85

```

&lt;210&gt;1249

&lt;211&gt;232

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1249

```

Leu Pro Met Asn Thr Ser His Arg Lys Thr Leu Val Phe Ser Tyr Leu
 1              5              10              15
Ser Ser Thr Phe Thr Leu Leu Leu Val Leu Ser Asn Leu Val Leu Ser
              20              25              30
Ser Lys Leu Ile Pro Thr Thr Phe Phe Asn Phe Ile Ile Pro Gly Gly
              35              40              45
Leu Ile Leu Tyr Pro Leu Thr Phe Leu Ile Ser Asp Val Val Asn Glu
              50              55              60
Ile Phe Gly Pro Lys Lys Ala Arg Val Met Ile Phe Ser Ala Phe Ile
              65              70              75              80
Ala Asn Leu Leu Ala Ser Ser Ile Val Gln Ile Phe Met Phe Phe Pro
              85              90              95
Val Ala Ser Pro Glu Met Gln Thr Ala Trp His Cys Leu Phe Asp Leu
              100              105              110
Ser Pro Leu Arg Phe Leu Ala Ser Leu Leu Ala Phe Ile Val Ser Gln
              115              120              125
Gln Leu Asp Ile Val Leu Tyr Thr Phe Phe Lys Asn Arg Thr Pro Asn
              130              135              140
Ser Ser Leu Trp Leu Arg Ser Asn Gly Ser Thr Trp Ile Ser Gln Xaa
              145              150              155              160
Pro Asp Thr Phe Il Val Asp Thr Cys Ile Leu Tyr Phe Gly Met Gly
              165              170              175
Leu Ser Phe Pro Gln Thr Leu Asn Ile Met Phe Tyr Ser Tyr Ile Tyr
              180              185              190
Lys Ile Thr Phe Cys Val Leu Thr Thr Pro Leu Phe Tyr Leu Ala Val

```

195 200 205  
 Asn Thr Ile Arg Lys Phe Leu Gly Met Pro Ser Thr Lys Ile Ala Asn  
 210 215 220  
 Thr Val Pro Leu Ile Asn Gln Pro  
 225 230

&lt;210&gt;1250

&lt;211&gt;103

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1250

Met Thr Pro Lys Ser Ile Gln Gln Leu His Leu Ile Lys Thr Ile Asp  
 1 5 10 15  
 Pro Val Arg Lys Ile Ser Pro Val Thr Thr Lys Lys Ser Ser Phe Phe  
 20 25 30  
 Arg Gln Ser Leu Leu Arg Phe Leu Glu Leu Phe Trp Met Phe Leu Tyr  
 35 40 45  
 Cys Ile Arg Ser Ile Arg Phe His Cys Val His Ile Ala Thr Phe Ile  
 50 55 60  
 Cys Arg Gly Leu Ile Leu Phe Leu Thr Thr Leu Phe Leu Ser Met Ile  
 65 70 75 80  
 Cys Ile Leu His Phe Ile Thr Leu Pro Trp Ile Cys Lys Glu Asp Pro  
 85 90 95  
 Arg Ile Ile Arg Lys Asn Lys  
 100

&lt;210&gt;1251

&lt;211&gt;79

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1251

Leu Asn Phe Ala Lys Ile Asp His Asn His Leu Tyr Leu Thr Cys Leu  
 1 5 10 15  
 Gly Asp Leu Gly Val Ala Cys Pro Ile Leu Ser Thr Asp Cys Leu Pro  
 20 25 30  
 Asn Tyr Ser Glu Lys Ala Ser His Glu Val Leu Val Tyr Ser Lys Phe  
 35 40 45  
 Arg Cys Ile Ser Gly Glu Pro Ser Arg Leu Ala Thr Ser Gly Asn Asp  
 50 55 60  
 Thr Tyr Tyr Ser Ile Val Ser Leu Pro Ile Gly Leu Arg Tyr Glu  
 65 70 75

&lt;210&gt;1252

&lt;211&gt;85

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1252

Met Val Glu Ile His His Lys Asp Pro Ser Leu Lys Lys Leu Phe Ala  
 1 5 10 15  
 Leu Gln Gln Ser Leu Glu Thr Leu Asn Ser Leu Ser Asp Ile Val Ala  
 20 25 30  
 Thr Tyr Glu Ala Met Phe Ser Leu Ile Tyr Glu Gly Leu Asn Lys Ala  
 35 40 45  
 Leu Arg Lys Asp Gln Leu Cys Tyr Leu Leu Ser Val Asn Ser Lys Gly  
 50 55 60  
 Glu Leu Leu Lys Ser Pro Ser Gly Asp Pro Ile Val Gln Thr Phe Pro  
 65 70 75 80  
 Ile His Pro His His  
 85

&lt;210&gt;1253

&lt;211&gt;75

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1253

Met Glu Glu Val Pro Phe Glu Asn Ala Met Gln Arg Leu Glu Glu Ile  
 1 5 10 15  
 Val Asp Leu Met Asn Gln Pro Thr Thr Ser Leu Asp Ala Ser Leu Ala

20 25  
 Leu Tyr Glu Glu Ala Asp Ala Leu Met Arg Ile Cys Glu Ser Arg Ile  
 35 40 45  
 Arg Gln Val Glu Gln Arg Val Arg Glu Leu Ala Glu Lys Arg His Glu  
 50 55 60  
 Ser Ser Leu Phe Glu Glu Gln Ala Val Val Arg  
 65 70 75

&lt;210&gt;1254

&lt;211&gt;126

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1254

Met Tyr Ile Ser Ser Ser Phe Ser Ser Ser Ala Lys Val Ser Ala Ile  
 1 5 10 15  
 Cys Leu Ala Ser Ile Cys Ser Lys Val Ser Ser Arg Phe Leu Ser Asn  
 20 25 30  
 Asn Ile Asn Pro Lys Thr Asn Arg Thr Thr Pro Arg Glu Ile Val Leu  
 35 40 45  
 Ile Pro Asn Pro Gln Thr Met Ser Ala Leu Asn Pro Glu Ile Thr Pro  
 50 55 60  
 Leu Ser Thr Ile Ala Pro Gln Thr Thr Arg Arg Met Pro Thr Thr Asn  
 65 70 75 80  
 Lys Val Ile Pro Arg Ala Arg Asp Leu Leu Ser Leu Gly Ile Thr Asn  
 85 90 95  
 Phe Val Ser Ser Gly Gly Val Gly Asp Thr Cys Arg Ile Ala Gly Ala  
 100 105 110  
 Ala Val Met Ile Glu Tyr Gln Asn His Lys Arg Asn Ile Asp  
 115 120 125

&lt;210&gt;1255

&lt;211&gt;81

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1255

Met Glu Ser Lys Lys Val Ser Lys Leu Ala Ser Asn Ser Thr Phe Phe  
 1 5 10 15  
 Leu Ala Ser Val Ser Cys Leu Gly Ser Thr Val Pro Pro Tyr Arg Ala  
 20 25 30  
 Leu Arg Ser Leu Thr Arg Val Ser Thr Ser Ser Cys Phe Phe Arg Lys  
 35 40 45  
 Asn Phe Val Leu Ala Ser Ser Arg Arg Ser Thr Lys Ser Asp Lys Ser  
 50 55 60  
 Phe Leu Phe Ala Ser Val Asp Ser Phe Glu Leu Ser Ser Arg Ser Phe  
 65 70 75 80  
 Ser

&lt;210&gt;1256

&lt;211&gt;80

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1256

Leu Leu Gly Met Cys Thr Leu Leu Leu Ile Pro Lys Gln Leu Arg Leu  
 1 5 10 15  
 Leu Ile Leu Thr Lys Cys Leu Ser Ile Thr Leu Ser His Thr Leu Ile  
 20 25 30  
 His Thr Arg Leu Gln Gly Ser Lys Cys Leu Phe Lys Gly Arg Leu Arg  
 35 40 45  
 His Thr Ile Asn Met Pro Ile Lys Ser His Gly Tyr Leu Pro Tyr Val  
 50 55 60  
 Thr Ser Arg Ser His Lys Ala Ile His Asn Leu Thr Ser Arg Phe Leu  
 65 70 75 80

&lt;210&gt;1257

&lt;211&gt;87

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1257

Gly Ser Thr Phe Ala Asn Leu Ser Leu His Leu Leu Tyr Cys Thr Lys  
 1 5 10 15  
 Ala Leu Val Asn Ala Cys Phe Ile Gly Trp Ser Gly Arg Ser Ala Ile  
 20 25 30  
 Arg Ser Ile Ile Ser Ile Ser Ser Thr Arg Gly Arg Val Ser Ser Ile  
 35 40 45  
 Ser Ser His Lys Thr Leu Arg Arg Phe Ala Ala Ser Glu Ser Met Val  
 50 55 60  
 Tyr Ser Ile Ser Ser Val Ala Ser Leu Ser Thr Pro Lys Ala Lys Val  
 65 70 75 80  
 Ser Ala Phe Asp Asn Leu Leu  
 85

&lt;210&gt;1258

&lt;211&gt;81

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1258

Met His Pro His Ser Lys Cys Arg Phe Leu Gly Phe Ser Cys Phe Lys  
 1 5 10 15  
 Lys Leu Ser Ile Ala Gly Thr Asn Val Leu Leu Ile Lys Glu Asp Phe  
 20 25 30  
 Pro Asp Pro Glu Thr Pro Val Thr Pro Ile Ser Arg Ala Asn Gly Arg  
 35 40 45  
 Arg Ile Glu Arg Phe Leu Arg Leu Trp Ile Val Ala Ser Val Ser Lys  
 50 55 60  
 Ser Gln Asp Val Gly Ala Ser Arg Asp Ser Gly Met Gly Met Val Ser  
 65 70 75 80  
 Ser

&lt;210&gt;1259

&lt;211&gt;107

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1259

Met Ile Ala Pro Ser Leu Pro Ala Leu Leu Ala Ile Cys Phe Asn Gly  
 1 5 10 15  
 Ala Val Asn Ala Phe Arg Ile Ile Arg Val Pro Ile Ala Ser Ser Ser  
 20 25 30  
 Phe Ala Ser Ile Gly Arg Lys Ala Ser Ser Val Gly Ile Gln Arg Thr  
 35 40 45  
 Lys Ala Val Pro Pro Pro Gly Arg Ile Pro Ser Ser Thr Ala Ala Met  
 50 55 60  
 Val Ala Cys Cys Ala Ser Ser Thr Leu Ser Phe Phe Ser Phe Ile Ser  
 65 70 75 80  
 Ile Ser Val Ala Ala Pro Thr Arg Ile Thr Ala Thr Pro Pro Glu Ser  
 85 90 95  
 Leu Ala Lys Arg Ser Trp Ser Phe Ser Leu Ser  
 100 105

&lt;210&gt;1260

&lt;211&gt;76

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1260

Leu Pro Pro Ala Leu Gln Val Leu Tyr Met Lys Ser Leu Asp Asn Ala  
 1 5 10 15  
 Asn Leu Glu Ile Leu His Lys Ile Phe Gln Val Gln Val Glu Ala Asn  
 20 25 30  
 Glu Leu Pro Leu Gln Met Leu His Glu Thr Thr Pro Lys Ala Leu Leu  
 35 40 45  
 Gln Gly His Ala Ala Phe Ser Asp Gln Asn Glu Leu Leu Glu Ile Ser  
 50 55 60  
 Tyr Thr Tyr His Lys Leu Thr Ser Tyr Lys Glu Ala  
 65 70 75

&lt;210&gt;1261

&lt;211&gt;76

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1261

```

Met Cys Asn Arg Cys Lys Asp Ser Ser Thr Ser Leu Val Phe Ser Thr
 1           5           10           15
Cys Leu Gly Thr His Lys Thr Glu Thr Pro Ser Phe Ile Asn Phe Cys
           20           25           30
Thr Thr Gly Ser His Phe Pro Ala Ser Leu Leu Cys Ile Glu Pro Arg
 35           40           45
Ile Thr Asn Phe Glu Ser Val Gly Asn Leu Lys Arg Ser Leu Gln Val
 50           55           60
Ser Leu Ser Lys Cys Ser Ala Val Cys Ala Ala Thr
 65           70           75

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&lt;210&gt;1262

&lt;211&gt;80

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1262

```

Met Leu Asn His Gln Gln His Lys Val Val Ser Ile Ser Gln Phe His
 1           5           10           15
Gln Gln Arg Gln Leu Val His Lys Lys Asn Trp Arg Arg Gly Ser Thr
           20           25           30
Thr His Lys Glu Cys Ala Thr Asp Ala Lys Ile Leu Gln His Pro Trp
 35           40           45
Ser Phe Gln Arg Val Leu Ala Pro Ile Lys Leu Arg Pro Pro Leu Leu
 50           55           60
Leu Ile Ser Ala Leu Gln Glu Ala Ile Phe Leu His His Phe Tyr Ala
 65           70           75           80

```

&lt;210&gt;1263

&lt;211&gt;112

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1263

```

Met Ile Arg Leu Trp Ser Cys Ser Ser Ile Lys Ile Glu Thr Val Pro
 1           5           10           15
Tyr Ser Lys Glu Ile Ala Tyr Cys Arg Trp Tyr Ser Asn Thr Thr Leu
           20           25           30
Ser Tyr Trp Ile Leu Ile Arg Glu Lys Cys Arg Pro Thr Lys Lys Ser
 35           40           45
Ala Ser Ser Arg Phe Leu Thr Lys Asn Asn Asn Ile Val His His Met
 50           55           60
Ser Ser Gln Lys Leu Phe Ala Phe Gln Ala Lys Ile Phe Val Ala Phe
 65           70           75           80
Phe Phe Gln Lys Asn Ile Phe Tyr Gln Phe Phe Phe Arg Met Thr
           85           90           95
Cys Lys Val Lys Arg Ser Ile Phe Gln Glu Glu Phe Cys Arg Pro Ile
100           105           110

```

&lt;210&gt;1264

&lt;211&gt;148

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1264

```

Ser Gly Arg Ile Ile Ser Val Met Leu Ser Ala Pro Pro Cys Glu Leu
 1           5           10           15
His Ser Asp Leu Ile Asp Pro Asp Leu Phe Glu Phe Asn His Arg Leu
           20           25           30
Asn Ile Cys Ile Ser Ala Glu Val Arg Gly Arg Val Thr Thr His Thr
 35           40           45
Phe Arg Gly Asp Ser Cys Asn Met Ser Phe Asn Cys Ser Val Arg Gly
 50           55           60
Asn Val Ile Thr Ile Pro Arg Ile Ile Arg Ile Glu Ile Arg Ser Leu
 65           70           75           80

```

Thr Ser Ser Phe Ser Ile Ile Thr Lys Cys Lys Arg Ser Ser Arg  
 85 90 95  
 Leu Arg Ile Thr Asn Ile Ile Ala Tyr Trp Ser Leu Arg Tyr Val Cys  
 100 105 110  
 Leu Arg Ile Asp Ile Lys Thr Val Arg Glu Cys Ser Ser Ile Lys Leu  
 115 120 125  
 Arg Thr Phe Arg Arg His Ile Thr Leu His Asn Lys Phe Thr Trp Arg  
 130 135 140  
 Ser Arg Gly Ile  
 145

&lt;310&gt;1265

&lt;211&gt;130

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1265

Ser Phe Phe Ser Phe Arg Lys Val Pro Asn Phe Ser Asn Gln Pro Met  
 1 5 10 15  
 Cys Phe Leu Ile Arg Ser Cys Trp Ser Ala Ser Ile Asn Ala Trp Arg  
 20 25 30  
 Gly Asp Arg Phe Cys Asp Ser Ser Leu Ser Asn His Asp His Met Val  
 35 40 45  
 Cys Asn Arg Arg Met Pro Ser Asn Ser Gly Leu Pro Ser Asn Asp Asp  
 50 55 60  
 Met Phe Thr Asn Phe Cys Arg Thr Cys Asn Ala Cys Leu Gly Asn Asn  
 65 70 75 80  
 Asn Thr Met Leu Ser Asn Phe Tyr Val Met Ser Tyr Leu Tyr Leu Val  
 85 90 95  
 Ile Tyr Phe Ser Ser Phe Met Asp His Gly Val Leu Glu Ser Thr Thr  
 100 105 110  
 Ile Tyr Arg Ser Val Gly Ser Asp Phe Tyr Ile Ile Thr Tyr Asn His  
 115 120 125  
 Ile Ala  
 130

&lt;210&gt;1266

&lt;211&gt;78

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1266

Glu Ala Val Phe Val Ser Gly Lys Lys Asp Gly Val Arg Gly Met Ile  
 1 5 10 15  
 Phe Val Pro Leu Ser Ile Leu Val Leu Ile Phe Leu Pro Leu Pro Gln  
 20 25 30  
 Ile Leu Leu Asp Phe Gly Leu Cys Ile Ser Phe Ala Leu Ser Leu Leu  
 35 40 45  
 Thr Val Cys Trp Val Phe Thr Leu Asn Ser Ser Asn Ser Ala Lys Phe  
 50 55 60  
 Phe Leu His Phe Ser Tyr Ile Phe Ala Tyr Cys Gly Trp Asp  
 65 70 75

&lt;210&gt;1267

&lt;211&gt;74

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1267

Leu Cys Thr Asp Ser Thr Ser Ile Ser Cys Cys Ser Ile Ile Ile Glu  
 1 5 10 15  
 Gly Cys Asn Ser Trp Val Val Phe Tyr Arg Thr Thr Asn Ala Ile Asp  
 20 25 30  
 Ser Pro Ser Arg Gly Met Val Ser Arg Asp Val Arg Phe His Gly Lys  
 35 40 45  
 Ile Ile Val Glu Asp His Arg Thr Gly Ile Leu Cys Lys Asn Ala Leu  
 50 55 60  
 Leu Met Tyr Ser Tyr Cys Thr Thr Gln Thr  
 65 70  
 <210>1268

&lt;211&gt;90

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1268

```

Met Gly Ala Glu Ile Glu Ile Ser Gly Val Leu Asp Ser Glu Leu Ser
 1           5           10           15
Leu Val Leu Ala Pro Cys Leu Cys Ala His Pro Thr Lys Ala Phe Ile
           20           25           30
Asn Gly Glu Ser Ser Arg Gly Leu Pro Phe Leu Arg Gly Thr Ser Cys
           35           40           45
Gly Glu Pro Val Leu Ser Val Ser Ser Ile Ser Glu Gly Asp Pro Thr
           50           55           60
Asp Ile Glu Ser Ser Ser Glu Glu Val His Ser Ser Pro Arg His Val
           65           70           75           80
Gln Gln Arg Pro Thr Ala Ser Ala Ala Ala
           85           90

```

&lt;210&gt;1269

&lt;211&gt;184

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1269

```

Phe Phe Val Phe Thr His Val Trp Tyr Leu Ile Ser Arg Gly Tyr Phe
 1           5           10           15
Tyr Ser Leu Phe Ser Leu Gly Val Gly Ala Leu Ala Thr Leu Thr Leu
           20           25           30
Ala Thr Arg Ile Gly Arg Ser Pro Ile Leu Tyr Pro Phe Ala Asn Ser
           35           40           45
Ser Lys Ile Val Pro Ser Gly Thr Ser Glu Val Ser Ser Val Cys Thr
           50           55           60
Ala Ser Cys Arg Lys Gly Leu Asn Phe Trp Pro Ile Glu Glu Tyr Ser
           65           70           75           80
Ile Ile Pro Phe Ser Ser Lys Ile Cys Leu Asn Trp Leu Arg Ile Met
           85           90           95
Leu Asn Pro Arg Ala Gln Phe Phe Thr Ser Ser Asp Ile Cys Val Ala
           100           105           110
Asn Pro Arg Ala Phe Ser Met Leu Ser Met Gly Leu Arg Lys Ser Ile
           115           120           125
Lys Val Phe Ser Lys Ala Tyr Cys Ile Ser Ser Trp Arg Ser Phe Cys
           130           135           140
Lys Arg Phe Leu Glu Phe Ser Asp Ser Ala Arg Ala Met Arg Tyr Leu
           145           150           155           160
Ser Phe Phe Ser Phe Asn Ser Val Phe Arg Val Thr Ile Ser Cys Cys
           165           170           175
Lys Cys Ser Thr Ser Phe Ser Phe
           180

```

&lt;210&gt;1270

&lt;211&gt;98

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1270

```

Leu Ile Ser Val Glu Glu Thr Pro Glu Ser Ser Ile Phe Ala Phe Ser
 1           5           10           15
Ala Ala Ser Leu Ser Leu Cys Lys Ala Ile Leu Ser Leu Leu Arg Ser
           20           25           30
Met Pro Ser Cys Phe Leu Asn Ser Ser Ile Ile His Leu Ile Met Thr
           35           40           45
Ser Ser Lys Ser Ser Pro Pro Arg Arg Val Ser Pro Phe Val Asp Arg
           50           55           60
Thr Ser Lys Thr Pro Ser Pro Ile Ser Arg Met Glu Ile Ser Lys Val
           65           70           75           80
Pro Pro Pro Arg Ser Lys Thr Ala Ile Phe Leu Ser Pro Thr Leu Ser
           85           90           95
Ile Pro

```

&lt;210&gt;1271

&lt;211&gt;78

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1271

```

Phe Leu Lys Thr Met Thr Lys Gly Phe Ala Phe Cys Ser Ala Ser Phe
 1               5               10               15
Pro Ile Ala Ile Ile Glu Asn Val Val Ser Lys Ser Val Glu Gly Val
                20               25               30
Ser His Pro Glu Gly Glu Asn Ala Asn Pro Ser Leu Leu Ser Leu Val
                35               40               45
Met Ala Ser Trp Thr Leu Gly Gly Thr Ser Thr Ser Ser Leu Asn Lys
 50               55               60
Ala Leu Ala Lys Val Leu Ile Ser Ser Gly Asp Val Phe Pro
 65               70               75

```

&lt;210&gt;1272

&lt;211&gt;123

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1272

```

Met Thr Thr Gly Ser Cys Ser Pro Ser Lys Ala Leu Phe Val Cys Ile
 1               5               10               15
Asn Cys Ile Ala Phe Ile Glu Met Ser Thr Asn Thr Thr Glu Ala Ala
                20               25               30
Pro Arg Leu Arg Ala Ser Lys Pro Ile Ala Pro Ile Pro Ala Lys Arg
                35               40               45
Ser Lys Lys Ala Ala Pro Ser Ile Ser Ser Leu Gln Ile Leu Lys Asn
 50               55               60
Ala Ser Phe Thr Lys Pro Glu Val Gly Arg Ile Cys Gly Leu Glu Asn
 65               70               75               80
Val Phe Lys Asp Phe Pro Leu Tyr Leu Pro Ala Lys Ile Leu Thr Ser
                85               90               95
Pro Leu Glu Glu Gln Ser Leu Arg Asn Gln Gln Pro Leu Val Cys Ser
                100               105               110
Gly Ser Leu Gly Tyr Tyr Arg Ile His Leu
                115               120

```

&lt;210&gt;1273

&lt;211&gt;112

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1273

```

Phe Thr Phe Phe Phe Leu Ala Gln Leu Glu Lys Gln Leu Pro His Leu
 1               5               10               15
Val Leu Phe Phe Phe Phe Ser Ala Thr Ser Ser Leu Arg Ala Ser Phe
                20               25               30
Ile His Ser Ser Leu Trp Ser Arg Val Phe Ser Ser Ser Phe Leu Arg
                35               40               45
Phe Ala Lys Phe Thr Ser Ala Phe Ser Ser Ser Leu Glu Ala Ala Ser
 50               55               60
Thr Thr Ser Phe Cys Leu Leu Thr Phe Ser Ser Ser Ser Glu Ser Cys
 65               70               75               80
Thr Ala Thr Thr Leu Met Tyr Asp Phe Ile Cys Lys Thr Ala Ser Leu
                85               90               95
Val Val Pro Ser Ser Asn Lys Ser Arg Ser Cys Trp Ile Phe Cys Ile
                100               105               110

```

&lt;210&gt;1274

&lt;211&gt;82

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1274

```

Leu Ser Ala Lys Leu Met Lys Thr Ser Leu Gly Val Cys Val Gly Ile
 1               5               10               15
Ala Gly Ile Ser Lys Gly Arg Cys Leu Ile Asn Ala Lys Ser Pro Phe
                20               25               30

```



Ser Leu Lys Ile Ser Glu Arg Ser Glu Arg Glu Arg Val Arg Ser  
 35 40 45  
 Tyr Val Tyr Ser Val Asp Val Gly Pro Gly Val Phe Leu Met Met Thr  
 50 55 60  
 Ser Lys Arg Glu Arg Leu Phe Pro Arg Arg Ile Ala Val Thr Thr Pro  
 65 70 75 80  
 Glu Thr

&lt;210&gt;1275

&lt;211&gt;134

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1275

Met Asn Ser Pro Thr Ile Lys Asp Pro Ser Leu Glu Thr Ala Cys Ala  
 1 5 10 15  
 Asp Asp Leu Leu Ala Pro Gly Ile Leu Glu Ser Arg Cys Cys Ser Pro  
 20 25 30  
 Ser Phe Gln Tyr Thr Ala Leu Ala Ile Ser Ser Leu Pro Met Ala Ser  
 35 40 45  
 Pro Thr Ile Thr Glu Pro Ser Ser Glu Ala Ser Gln Ala Gln Glu Cys  
 50 55 60  
 Arg Ser Ser Gly Lys Leu Gly Arg Thr Thr Ile Pro Val Ser Ser His  
 65 70 75 80  
 Phe Thr Ala Lys Phe Val Ser Val Ser Ser Leu Tyr Arg His Pro Thr  
 85 90 95  
 Ile Val Phe Pro Ser Leu Glu Thr Pro Ser Ala Lys Asp Cys Ile Pro  
 100 105 110  
 Ser Glu Asn Ile Pro Arg Ser Thr Ser Ala Pro Phe Thr His Phe Thr  
 115 120 125  
 Ala Arg Gln Asp Gly Ser  
 130

&lt;210&gt;1276

&lt;211&gt;84

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1276

Met Arg Ser Trp Thr Arg Trp Thr Arg Cys Gly Ser Cys Cys Arg Cys  
 1 5 10 15  
 Ser Gly Ser Trp Arg Cys Ser Arg Ser Cys Cys Arg Asn His Gly Ser  
 20 25 30  
 Asn Thr Asn Tyr Ser Ser Ser Cys Cys Pro Ser Gly Glu Thr Ser Cys  
 35 40 45  
 Tyr His Ser Cys Gln Thr Ser Asp His Arg Gly Tyr Lys Ser Gly Cys  
 50 55 60  
 Gln Ile Trp Asn Lys Ser Ile Tyr Gln Asn Phe Ser Gln Ser Asp Cys  
 65 70 75 80  
 Gln Ser His Phe

&lt;210&gt;1277

&lt;211&gt;76

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1277

Met Arg Glu Phe Ser Cys Ile Lys Asp Arg Lys Asn Arg Cys Phe Arg  
 1 5 10 15  
 Ala Ala Ala Val Lys Ile Met Cys Thr Pro Ser Arg Ser Ser Ala Arg  
 20 25 30  
 Thr Thr Arg Pro Lys Glu Val Lys Lys Arg Thr Ser Leu Glu Tyr Ile  
 35 40 45  
 Gln Ser Ile Trp Asp Leu Gly Pro Leu Asp Val Tyr Ser Cys Phe Ser  
 50 55 60  
 Lys Glu Thr Ser Ser Glu Leu Tyr Ala Lys Arg Phe  
 65 70 75  
 <210>1278

&lt;211&gt;78

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1278

```

Met Met Ile Val Arg Cys Cys Phe Arg Ala Leu Leu Cys Phe Ser Met
 1              5              10              15
Cys Ser Arg Thr Ser Arg Pro Arg Ser Pro Ile Lys Ala Ile Thr Leu
              20              25              30
Ile Val Asp Phe Asp Pro Lys Ala Ile Ala Glu Ser Ser Glu Asp Phe
              35              40              45
Pro Leu Pro Gly Ser Glu Lys Thr Pro Ile Arg Cys Pro Phe Pro Lys
              50              55              60
Val Arg Asn Ala Ser Ile Ala Leu Ile Pro Val Gly Lys Ile
              65              70              75

```

&lt;210&gt;1279

&lt;211&gt;86

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1279

```

Met Arg Arg Ile Phe Pro Thr Ser Ile Leu Leu Ile Ala Thr Phe Cys
 1              5              10              15
Lys Leu Pro Ser Ser Lys Thr Ser Gln Pro Val Val Gly Ala Ser Cys
              20              25              30
Phe Lys Glu Thr Lys Val Leu Phe Ala Phe Pro Asp Thr Ile Cys Pro
              35              40              45
Asn Ala Ser Glu Ile Ala Asn Lys Thr Arg Ser Lys Ala Pro Ser Lys
              50              55              60
Ala Pro Pro Ile Lys Ile Glu Pro Lys Gly Ala Asp Val Ile Lys Ile
              65              70              75
Ser Met Phe Thr Thr Phe
              85

```

&lt;210&gt;1280

&lt;211&gt;124

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1280

```

Val Lys Gly Val Leu Lys Arg Gln Arg Leu Ser Leu Thr Met Gly Gly
 1              5              10              15
Arg Ser Lys Leu Lys Arg Arg Ser Trp Leu Lys Ala Ala Gln Thr Thr
              20              25              30
Pro Val Val Cys Trp Arg Arg Asn Val Ile Phe Ser Thr Val Ile Phe
              35              40              45
Ser Pro Ala Ile Ile Arg Ser Pro Ser Ser Ser Leu Glu Ala Ser Ser
              50              55              60
Thr Thr Ile Thr Asn Phe Pro Ala Leu Lys Ser Ser Ile Ala Arg Ser
              65              70              75
Lys Glu Thr Lys Phe Ala Glu Pro Thr Ser Ser Arg Val Ser Ile Ile
              85              90              95
Asp Ser Leu Ala Leu Thr Asp Ser Asp Ala Lys His Ala Thr Leu Lys
              100              105              110
Ile Leu Ser Phe Gln Phe Leu Met Gly Ser Lys Thr
              115              120

```

&lt;210&gt;1281

&lt;211&gt;85

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1281

```

Ile Gln Arg Thr Leu Cys Leu Leu Phe Phe Lys Lys Phe Ile Leu Leu
 1              5              10              15
Ile Leu Val Arg Thr Leu Arg Phe Pro Ile Leu Thr Phe Leu Ser Trp
              20              25              30
Leu Asn Phe Arg Leu Lys Leu Ile Phe Ser Leu Ile Leu Tyr Gly Leu
              35              40              45
Ala Asn Val Ala Gln Leu Val Arg Ala Ser Asp Cys Gly Ser Glu Gly

```

50                      55                      60  
 Arg Gly Phe Lys Pro Arg Arg Ser Pro Ser Leu Ser Ser Leu Phe Leu  
 65                      70                      75                      80  
 Leu Phe Phe Leu Ile  
                          85

&lt;210&gt;1262

&lt;211&gt;112

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1282

Val Leu Tyr Asn Pro Lys Ala Phe Ile Thr His Ala Ala Ser Leu Arg  
 1                      5                      10                      15  
 Gln Thr Phe Val His Cys Glu Arg Phe Ser Thr Ala Ala Ser Arg Arg  
                          20                      25                      30  
 Ser Leu Gly Ser Val Ser Val Pro Val Leu Ala Val Asn Leu Ser Ile  
                          35                      40                      45  
 Arg Leu Asp Val Ile Ala Leu Val Gly Phe Tyr Pro Thr Asn Lys Leu  
                          50                      55                      60  
 Ile Ser His Lys Leu Phe Leu Asn Arg Lys Val Arg Arg Ser Pro Ser  
 65                      70                      75                      80  
 Leu Ile Tyr Ile Arg Cys Leu Ile Thr Leu His Ser Val Leu Ala Ile  
                          85                      90                      95  
 Val Ser Asn Arg Tyr Pro Gln Val Glu Gly Arg Leu Ser Met Tyr Tyr  
                          100                      105                      110

&lt;210&gt;1283

&lt;211&gt;77

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1283

Leu Glu Ser Gly Leu Pro Arg Phe Arg Leu Gly Phe Thr Cys Leu Ala  
 1                      5                      10                      15  
 Leu Leu Arg Tyr Arg Leu Ala Ser Phe Val Phe Ser Phe Thr Gly Leu  
                          20                      25                      30  
 Ser Pro Cys Ile Val Gln Leu Ser Arg Ser Ile Gln Leu Lys Leu Lys  
                          35                      40                      45  
 Ile Pro Cys Tyr Arg Pro Tyr Asn Pro Ile Leu Lys Ile Trp Phe Arg  
                          50                      55                      60  
 Leu Phe Pro Phe Arg Ser Pro Leu His Arg Glu Ser Leu  
 65                      70                      75

&lt;210&gt;1284

&lt;211&gt;85

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1284

Met Ile Tyr Gln Asn Gly Ile Gly Val Trp Asn Ile Asn Pro Val Phe  
 1                      5                      10                      15  
 Tyr Gln Cys Ser Ser Asn Glu Asp Val Gly Phe Leu Ile Phe Glu Phe  
                          20                      25                      30  
 Arg Lys Asp Ile Arg Glu Val Leu Ser Ser His Leu Thr Met Ser Tyr  
                          35                      40                      45  
 Ala Asn Thr Ser Leu Arg Asn Gln Ile Ala Asn Gly Leu Ser Lys Ser  
                          50                      55                      60  
 Ile Asp Ala Leu Asn Pro Ile Met Asn Asp Ile Gly Leu Ser Ser Ser  
 65                      70                      75                      80  
 Lys Glu Leu Val Pro  
                          85

&lt;210&gt;1285

&lt;211&gt;94

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1285

Val Lys Leu Lys Leu Phe Ser Val Ile Ala Cys Ile Thr Phe Gln Lys  
 1                      5                      10                      15  
 Arg Asp Thr Leu Cys Ser Ile Tyr Thr Ile Gly Asp Phe Leu Gln Ile

20 25 30  
 Gln Ser Ile Asp Ser Ile Trp Val Met Asp Gln Asn Asn Leu Phe Phe  
 35 40 45  
 Tyr Lys Pro Trp Lys Lys Gly Lys Ser His Lys Asn Asn Cys Ile Leu  
 50 55 60  
 Gln Gly Phe Leu Gly Ile Asn Gly Phe Cys Leu His Glu Glu Ser Leu  
 65 70 75 80  
 Ser Cys Pro Arg Cys Ala Arg Thr Tyr His Trp Ile Phe Arg  
 85 90

&lt;210&gt;1286

&lt;211&gt;74

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1286

Met Gln Gln Ser Val Arg Lys Leu Phe Gly Thr Asp Gly Val Arg Gly  
 1 5 10 15  
 Arg Ala Asn Phe Glu Pro Met Thr Val Glu Thr Thr Val Leu Leu Gly  
 20 25 30  
 Lys Ala Val Ala Arg Val Leu Arg Glu Gly Arg Ser Gly Lys His Arg  
 35 40 45  
 Val Val Val Gly Lys Asp Thr Arg Leu Ser Gly Tyr Met Phe Glu Asn  
 50 55 60  
 Ala Leu Ile Ala Gly Ser Ile Leu Trp Gly  
 65 70

&lt;210&gt;1287

&lt;211&gt;83

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1287

Val His Phe Ser Asn Ser Ser Pro Phe Asn Val Trp Thr Leu Trp Leu  
 1 5 10 15  
 Ala Ala Cys Cys Thr Leu Ile Ala Arg Asn His Asn Thr Leu Ile Asn  
 20 25 30  
 Phe Gln Ile Leu Ile Leu Ser Trp Leu Leu Ile Thr Leu Ala Thr Phe  
 35 40 45  
 Ser Leu Gln Ile Phe Cys Lys Gly Asn Lys Val Leu Leu Ala Thr Gln  
 50 55 60  
 Thr Val Leu Gly Leu Phe Val Thr Ile Val Gly Thr Gln Leu Leu Val  
 65 70 75 80  
 Ser Gly Leu Gln Gln Ala Phe Leu  
 85

&lt;210&gt;1288

&lt;211&gt;119

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1288

Met Phe Arg Arg Lys Leu Ser Ile Leu Phe Gln Leu Ser Leu Thr Ser  
 1 5 10 15  
 Ser Met Val Arg Val Thr Ser Ser Cys Leu Ile Leu Lys Thr Ser Phe  
 20 25 30  
 Leu Tyr Ser Ala Thr Ala Arg Thr Ala Leu Ser Asp Asn Ser Cys Thr  
 35 40 45  
 Leu Glu Ala Ala Ser Val Ser Cys Asp Arg Glu Val Lys Thr Phe Pro  
 50 55 60  
 Ile Pro Leu Lys Lys Val Phe Ala Val Ala Ser Leu Asn Leu Pro Glu  
 65 70 75 80  
 Ile Leu Trp Thr Asn Pro Lys Met Leu Ser Pro Glu Ile Ser Pro Thr  
 85 90 95  
 Ile Gly Ala Ile Ala Pro Lys Ile Pro Asn Val Ala Val Ala Ile Pro  
 100 105 110  
 Ser Gln Arg Ala Tyr Leu Ala  
 115

&lt;210&gt;1289

&lt;211&gt;126

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1289

```

Met Val Ile Ile Phe Arg Leu Ser Ser Ser Leu Phe Ile Gly Arg Cys
 1           5           10           15
Phe Ser Ser Gln Ser Gln Asn Phe Ser Phe Ser Lys His Leu Ile Thr
           20           25           30
Arg Glu Ile Ser Pro Ala Lys Lys Pro Ala Lys Ala Lys Ile Pro Pro
           35           40           45
Pro Leu Lys Ile Ala Thr Met Pro Ile Pro Ile Glu Thr Asn Gly Ala
           50           55           60
Ser Gln Pro Ile Met Ser Glu Arg Asp Pro His Asn Leu Ser Arg Phe
           65           70           75           80
Ser Phe Ser Met Leu Thr Leu Ile Val Ser Ile Leu Phe Ser Cys Arg
           85           90           95
Ala Ser Ser Ser Arg Cys Val Asp Ser Thr Glu Ser Leu Trp His Pro
           100          105          110
Tyr Glu Glu Lys Ser Glu Arg Ile Pro Cys Phe Val Ser Arg
           115          120          125

```

&lt;210&gt;1290

&lt;211&gt;94

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1290

```

Arg Asp Tyr Val Gly His Pro Met Gly Ile Tyr Arg Asn Arg Arg Cys
 1           5           10           15
Arg Gly Asp Val Trp Thr Ser Lys Lys Ser Ser Leu Cys Arg Ala Ser
           20           25           30
Tyr Ser Leu Arg Ile Phe Arg Leu Pro Asn Asn Leu His Leu Ile Phe
           35           40           45
Phe Ile Thr Phe Trp Leu Ala Leu Pro Thr Ser Thr Ser Glu His Pro
           50           55           60
Gln Ser Leu Tyr Ser Trp Cys Pro Arg His Pro Arg Arg Glu Met Gly
           65           70           75           80
Arg Ser Ala His Glu Cys Arg Pro Asp Tyr Cys Cys Phe Ile
           85           90

```

&lt;210&gt;1291

&lt;211&gt;98

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;1291

```

Met Gly Phe Cys Asn Phe Val Ile Tyr Pro Cys Arg Glu Glu Phe Asn
 1           5           10           15
Ile Phe Cys Cys Pro Ser Ala Asn Lys Leu Ser Ile Phe Ile Phe Thr
           20           25           30
Pro Ala Asn Ala Asp Ser Gly Gly Asp Arg Met Gly Ser Val Arg Glu
           35           40           45
Ser Ser Thr Thr Thr Arg His Asp Tyr Phe Lys Asp Ser Ala Val Phe
           50           55           60
Glu Arg Phe Tyr Thr Gly Ile Tyr Arg Asn Asp Ile Pro Lys Glu Leu
           65           70           75           80
Phe Arg Lys Tyr Arg Cys Ile Arg Asp Asp Ile Lys Ile Phe Asp Phe
           85           90           95

```

Cys Leu

&lt;210&gt;1292

&lt;211&gt;20

&lt;212&gt;DNA

&lt;400&gt;1292

tgaccacttg gttgtaggga 20

&lt;210&gt;1293

&lt;211&gt;20

&lt;212&gt;DNA

&lt;400&gt;1293

```

ggagttctcc ttggagttca      20
<210>1294
<211>20
<212>DNA
<400>1294
cgcttagtcc atcggtttt      20
<210>1295
<211>20
<212>DNA
<400>1295
cgaacacctg aacttgcctc      20
<210>1296
<211>20
<212>DNA
<400>1296
tctgagagcg ttgaagcaga      20
<210>1297
<211>20
<212>DNA
<400>1297
taggagccta gaccgcaagc      20
<210>1298
<211>20
<212>DNA
<400>1298
ggaaggattc actgcacgta      20
<210>1299
<211>20
<212>DNA
<400>1299
ggtcactccg agcgtcgtca      20
<210>1300
<211>20
<212>DNA
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&lt;210&gt;6844

&lt;211&gt;78

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;6844

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Cys | Leu | Pro | Leu | Arg | Asp | Ser | Gly | Thr | Ser | Pro | Trp | Ile | Ser | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Arg | Ala | Asn | Pro | Ser | Ala | Ile | Ala | Val | Phe | Pro | Thr | Pro | Gly | Ser | Pro |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ile | Ser | Ile | Gly | Leu | Phe | Leu | Val | Leu | Arg | Glu | Ser | Thr | Trp | Met | Val |
|     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |     |
| Leu | Arg | Ile | Ser | Ser | Ser | Leu | Pro | Ile | Thr | Gly | Ser | Ser | Leu | Pro | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Arg | Ala | Asn | Ala | Val | Lys | Phe | Leu | Gln | Tyr | Phe | Ser | Lys | Pro |     |     |
|     | 65  |     |     | 70  |     |     |     | 75  |     |     |     |     |     |     |     |

&lt;210&gt;6845

&lt;211&gt;106

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;6845

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Ser | Met | Ser | Phe | Lys | Arg | Phe | Leu | Gln | Gln | Ile | Pro | Val | Arg |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |     |     |
| Ile | Cys | Leu | Leu | Ile | Ile | Tyr | Leu | Tyr | Gln | Trp | Leu | Ile | Ser | Pro | Leu |
|     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |     |

Leu Gly Ser Cys Arg Phe Phe Pro Ser Cys Ser Tyr Ala Glu  
 35 40 45  
 Gln Ala Leu Lys Ser His Gly Phe Leu Met Gly Cys Trp Leu Ser Ile  
 50 55 60  
 Lys Arg Ile Gly Lys Cys Gly Pro Trp His Pro Gly Gly Ile Asp M t  
 65 70 75 80  
 Val Pro Lys Thr Ala Leu Gln Glu Val Leu Glu Pro Tyr Gln Glu Ile  
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 100 105

&lt;210&gt;6846

&lt;211&gt;79

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;6846

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 1 5 10 15  
 Ser Ile Leu Ser Thr Pro Tyr Asn Asn Arg Ala Ile Arg Arg Asn Ser  
 20 25 30  
 Ile Arg Phe Arg Leu His Cys Pro Cys Gly Arg Glu Gln Ile His Phe  
 35 40 45  
 Ile Val Phe Pro Cys Asp Cys Glu Thr Leu Arg Lys Leu Ile Leu Asp  
 50 55 60  
 Asn Pro Arg Asp Tyr Arg Pro Ile Arg Gly Asp Ser Cys Cys Phe  
 65 70 75

&lt;210&gt;6847

&lt;211&gt;103

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;6847

Ile Leu Arg Val Ala Val Ala Ser Ile Ser Tyr Gln Gln Cys Ser Lys  
 1 5 10 15  
 Glu Glu Leu Gly Cys Gln Val Glu His Arg Lys Gln Gly Lys Ile Gln  
 20 25 30  
 Lys Pro Leu His Tyr Ile Asn Ala Ile Gly Gly Ser Arg Ser Leu Thr  
 35 40 45  
 Leu Thr Tyr Thr Cys Ser Ser Glu Val Val Leu Leu Pro Ile Thr Gly  
 50 55 60  
 Arg Val Leu Gln Leu Arg Cys Thr Ser Leu Glu Asn Arg Met Tyr Lys  
 65 70 75 80  
 Leu Gln Tyr Arg Ser Pro Leu Arg Asp Ser Pro Arg Asp Leu Glu Ser  
 85 90 95  
 Val Val Gly Leu Val His Cys  
 100

&lt;210&gt;6848

&lt;211&gt;88

&lt;212&gt;PRT

&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;6848

Arg Leu Cys Arg Pro Arg Pro Tyr Arg Leu Ala Met Pro Pro Lys Gly  
 1 5 10 15  
 Arg Met Arg Ile Leu Ser Leu Ser Glu Arg Arg Phe Tyr Gly Lys Arg  
 20 25 30  
 Glu Val Arg Ile Ile Leu Glu Thr Arg Glu Ile Leu Val Val Phe Glu  
 35 40 45  
 Arg Cys Asn Cys Ile Leu Val Leu Leu Lys Lys Arg Leu Cys Asn Gln  
 50 55 60  
 Pro Asn Lys Gly Thr Cys Ile Leu Val Cys Ile Leu Asn Ile Val Leu  
 65 70 75 80  
 Phe Ser Val Gly Pro Ser Phe Trp  
 85

&lt;210&gt;6849

&lt;211&gt;141

&lt;212&gt;PRT



&lt;213&gt;Chlamydia pneumoniae

&lt;400&gt;5949

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Met Asn Lys Leu Leu Asn Phe Val Ser Arg Thr Leu Gly Gly Asp Thr
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Ala Leu Asn Met Ile Asn Lys Ser Ser Asp Leu Ile Leu Ala Leu Trp
  20          25          30
Met Met Gly Val Val Leu Met Ile Ile Ile Pro Leu Pro Pro Pro Ile
  35          40          45
Val Asp Leu Met Ile Thr Ile Asn Leu Ser Ile Ser Val Phe Leu Leu
  50          55          60
Met Val Ala Leu Tyr Ile Pro Ser Ala Leu Gln Leu Ser Val Phe Pro
  65          70          75          80
Ser Leu Leu Leu Ile Thr Thr Met Phe Arg Leu Gly Ile Ile Phe Pro
  85          90          95
Leu Leu Asp Arg Phe Ser Leu Lys Arg Met Arg Val Met Ser Phe Arg
 100          105          110
Leu Arg Arg Leu Arg Gly Trp Arg Glu Leu Cys Gly Arg Val His Tyr
 115          120          125
Leu Pro His Tyr Tyr Asn His Ser Val Tyr Arg Ser Asn
 130          135          140

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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|  |           |  |
|--|-----------|--|
| <b>(51) International Patent Classification <sup>6</sup> :</b><br><b>C12N 15/31, 15/62, C07K 14/295, 16/12, 19/00, A01K 67/027, A61K 39/118, G01N 33/53, C12Q 1/68</b>   | <b>A3</b> | <b>(11) International Publication Number:</b> <b>WO 99/27105</b><br><br><b>(43) International Publication Date:</b> 3 June 1999 (03.06.99)   |
| <b>(21) International Application Number:</b> PCT/IB98/01890<br><br><b>(22) International Filing Date:</b> 20 November 1998 (20.11.98)<br><br><b>(30) Priority Data:</b><br>97/14673                      21 November 1997 (21.11.97)      FR<br>60/107,078                    4 November 1998 (04.11.98)      US<br><br><b>(71) Applicant (for all designated States except US):</b> GENSET<br>[FR/FR]; 24, rue Royale, F-75008 Paris (FR).<br><br><b>(72) Inventor; and</b><br><b>(75) Inventor/Applicant (for US only):</b> GRIFFAIS, Rémy [FR/FR];<br>51, boulevard Romain Roland, F-92120 Montrouge (FR).<br><br><b>(74) Agents:</b> MARTIN, Jean-Jacques et al.; Cabinet Regimbeau,<br>26, avenue Kléber, F-75116 Paris (FR).  |           | <b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).<br><br><b>Published</b><br><i>With international search report.</i><br><i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i><br><br><b>(88) Date of publication of the international search report:</b><br>11 November 1999 (11.11.99) |
| <b>(54) Title:</b> <i>CHLAMYDIA PNEUMONIAE</i> GENOMIC SEQUENCE AND POLYPEPTIDES, FRAGMENTS THEREOF AND USES THEREOF, IN PARTICULAR FOR THE DIAGNOSIS, PREVENTION AND TREATMENT OF INFECTION<br><br><b>(57) Abstract</b><br><br><p>The subject of the invention is the genomic sequence and the nucleotide sequences encoding polypeptides of <i>Chlamydia pneumoniae</i>, such as cellular envelope polypeptides, which are secreted or specific, or which are involved in metabolism, in the replication process or in virulence, polypeptides encoded by such sequences, as well as vectors including the said sequences and cells or animals transformed with these vectors. The invention also relates to transcriptional gene products of the <i>Chlamydia pneumoniae</i> genome, such as, for example, antisense and ribozyme molecules, which can be used to control growth of the microorganism. The invention also relates to methods of detecting these nucleic acids or polypeptides and kits for diagnosing <i>Chlamydia pneumoniae</i> infection. The invention also relates to a method of selecting compounds capable of modulating bacterial infection and a method for the biosynthesis or biodegradation of molecules of interest using the said nucleotide sequences or the said polypeptides. The invention finally comprises, pharmaceutical, in particular vaccine, compositions for the prevention and/or treatment of bacterial, in particular <i>Chlamydia pneumoniae</i>, infections.</p> |           |  |

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| CZ | Czech Republic           | LI | Liechtenstein                            | SD | Sudan  |    |                          |
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| EE | Estonia                  |    |  |    |  |    |                          |

# INTERNATIONAL SEARCH REPORT

International Application No.

98/01890

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/31 C12N15/62 C07K14/295 C07K16/12 C07K19/00  
A01K67/027 A61K39/118 G01N33/53 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.               |
|------------|--|-------------------------------------|
| Y          | PEREZ MELGOSA M ET AL: "Isolation and characterization of a gene encoding a Chlamydia pneumoniae 76-kilodalton protein containing a species-specific epitope." INFECT IMMUN, MAR 1994, 62 (3) P880-6, XP002076845 UNITED STATES abstract page 880, right-hand column, paragraph 3 -page 881, left-hand column, paragraph 1<br>---<br>-/- | 1-3,7,9, 11,13, 26,27, 30,44, 45,48 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

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Date of the actual completion of the international search

3 June 1999

Date of mailing of the international search report

17.09.99

Name and mailing address of the ISA

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Authorized officer

Gurdjian, D

## INTERNATIONAL SEARCH REPORT

International Application No

PCT, .B 98/01890

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.               |
|------------|--|-------------------------------------|
| Y          | TOMB J -F ET AL: "THE COMPLETE GENOME SEQUENCE OF THE GASTRIC PATHOGEN HELICOBACTER PYLORI" NATURE, vol. 388, no. 6642, 7 August 1997 (1997-08-07), pages 539-547, TABEL, XP002062106 the whole document   | 1-3,7,9, 11,13, 26,27, 30,44, 45,48 |
| A          | ---<br>KORNAK JM ET AL: "Sequence analysis of the gene encoding the Chlamydia pneumoniae DnaK protein homolog." INFECT IMMUN, FEB 1991, 59 (2) P721-5, XP002076846 UNITED STATES abstract page 724   | 1                                   |
| A          | ---<br>WATSON MW ET AL: "The CrP operon of Chlamydia psittaci and Chlamydia pneumoniae." MICROBIOLOGY, OCT 1995, 141 ( PT 10) P2489-97, XP002076847 ENGLAND abstract page 2942 -page 2943  | 1                                   |
| A          | ---<br>LOBAU S ET AL: "Molecular cloning, sequence analysis, and functional characterization of the lipopolysaccharide biosynthetic gene kdtA encoding 3-deoxy-alpha-D-manno-octulosonic acid transferase of Chlamydia pneumoniae strain TW-183." MOL MICROBIOL, NOV 1995, 18 (3) P391-9, XP002076848 ENGLAND abstract | 1                                   |
| A          | ---<br>PETERSON EM ET AL: "Characterization of the murine antibody response to peptides representing the variable domains of the major outer membrane protein of Chlamydia pneumoniae." INFECT IMMUN, AUG 1996, 64 (8) P3354-9, XP002076849 UNITED STATES abstract   | 1                                   |
| A          | ---<br>EP 0 784 059 A (HITACHI CHEMICAL CO LTD) 16 July 1997 (1997-07-16) claims 1-45  | 1                                   |
|            | ---<br>-/--  |                                     |

# INTERNATIONAL SEARCH REPORT

International Application No

PC 98/01890

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.     |
|------------|--|---------------------------|
| T          | <p>"http://www.ncbi.nlm.nih.gov/cgi-bin/Entrez/frameset?db=Genome&amp;gi=140"</p> <p>KALMAN S. ET AL., December 1998 (1998-12), XP002104860</p> <p>page 1 -page 2</p> <p>-----</p> | <p>1-3,7,9,<br/>11,13</p> |

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 98/01890

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
Remark: Although claims 40-43  
are directed to a method of treatment of the human/animal  
body, the search has been carried out and based on the alleged  
effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such  
an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all  
searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment  
of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report  
covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is  
restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
claims 1-3 and 7,9,11,13,26,27,30,44,45,48 (partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.



FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Invention 1 : claims 1-3 and 7,9,11,13,26,27,30,44,45,48 (partially)  
nucleotide seq.id.n.1 coding for the genome of  
Chlamydia pneumoniae, corresponding vector, host, method of  
detection, DNA chip, screening assay and kit.

Invention 2 : claims 4-56 (partially)

ORF2 of Chlamydia pneumoniae, fragments, corresponding  
polypeptides, nucleotide sequences, DNA chip, cloning  
vector, host, method for producing polypeptides, fusion poly-  
peptide, method for the detection, kit, antibody, immunogenic  
and pharmaceutical composition, screening assay.

Inventions 3-1297 : identical to invention 2, but applied to orf3-1297, in  
which invention 3 is limited to ORF3, invention 4 to ORF4, etc..  
until invention 1297 that is limited to ORF1297.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT, .B 98/01890

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---|---------------------|----------------------------|---------------------|
| EP 0784059                                | A | 16-07-1997          | AU 685680 B                | 22-01-1998          |
|   |   |                     | AU 3532995 A               | 09-04-1996          |
|   |   |                     | WO 9609320 A               | 28-03-1996          |
|   |   |                     | JP 8143594 A               | 04-06-1996          |
|   |   |                     | JP 9009974 A               | 14-01-1997          |
|   |   |                     | JP 9009976 A               | 14-01-1997          |
|   |   |                     | JP 9009999 A               | 14-01-1997          |
|   |   |                     | JP 9015243 A               | 17-01-1997          |
|   |   |                     | JP 9015244 A               | 17-01-1997          |

Form PCT/ISA/210 (patent family annex) (July 1992)